UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
Science and Ecosystem Support Division
Field Services Branch
980 College Station Road
Athens, Georgia 30605-2720

July 16, 2018

4SESD-FSB

MEMORANDUM

SUBJECT: Southside Chattanooga Lead Site Final Report
Chattanooga, Tennessee
SESD Project Number 18-0271

FROM: Timothy Simpson, Life Scientist /tmothy Simpson
Field Services Branch

THRU: John Deatrick, Chief JD
Field Services Branch

TO: Robenson Joseph, Remedial Project Manager
Superfund Division

Attached is the final report for the surface soil sampling investigation conducted at the Southside Chattanooga Lead Site in Chattanooga, Tennessee. The sampling investigation was conducted the week of May 14, 2018. If you have any questions, please call me at (706) 355-8736.

Attachment

SESD Project ID: 18-0271

Sampling Investigation Report

Southside Chattanooga Lead Site Remedial Investigation Chattanooga, Tennessee

Project Date: May 14-17, 2018

Report Date: July 16, 2018

Project Leader: Tim Simpson
Field Services Branch
Science & Ecosystem Support Division
USEPA – Region 4
980 College Station Road
Athens, Georgia 30605-2720

The activities depicted in this report are accredited under the US EPA Region 4 Science and Ecosystem Support Division ISO/IEC 17025 accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation AT-1644.

Project Requestor:

Robenson Joseph, Remedial Project Manager
US EPA Region 4
Superfund Division
61 Forsyth Street, SW
Atlanta, Georgia 30303

Analytical Support:

Analytical Services Branch
US EPA Region 4
Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605

Approvals:
SESD Project Leader: Timothy Simpson

Tim Simpson, Life Scientist
Field Services Branch

07/16/2018
Date

Approving Official:

John Deatrick, Chief
Field Services Branch

7/16/18
Date

Table of Contents

SAMPLING INVESTIGATION REPORT
SOUTHSIDE CHATTANOOGA LEAD SITE REMEDIAL INVESTIGATION
CHATTANOOGA, TENNESSEE
SESD PROJECT IDENTIFICATION NUMBER 18-0271

Introduction

During the week of May 14, 2018, representatives of the United States Environmental Protection Agency (EPA), Region 4, Science and Ecosystem Support Division (SESD) and Environmental Services Assistance Team contractor Alion conducted a surface soil sampling investigation at the Southside Chattanooga Lead Site in Chattanooga, Tennessee. The sampling investigation is part of a Remedial Investigation and was requested by Robenson Joseph, Remedial Project Manager, Superfund Division, EPA Region 4, Atlanta, Georgia.

The following personnel participated in the investigation:

Name	Organization	Duties
Tim Simpson	EPA/SESD	Field Project Leader
Kevin Simmons	EPA/SESD	XRF, Data Management
Brian Striggow	EPA/SESD	Sampler, Safety Officer
Michael Roberts	EPA/SESD	Sampler
Art Masters	EPA/SESD	Sampler
Landon Pruitt	EPA/SESD	Scribe, XRF and Sample Support
Don Fortson	Alion	XRF and Sample Support

Site Background

The Southside Chattanooga Lead Site is located in Chattanooga, Hamilton County, Tennessee. The site consists of residential neighborhoods and communal areas (such as schools, parks, and daycare facilities) in the downtown Chattanooga area where lead-impacted foundry material has been used as fill material and topsoil. The eight neighborhoods within the site area are: Alton Park, Cowart Place, East Lake, Highland Park, Jefferson Heights, Oak Grove, Richmond, and Southside Gardens.

Sampling Investigation Summary

During the week of May 14, 2018, EPA collected 32 surface soil samples from 28 properties within the Site. Samples were collected from 25 residential properties and two churches (three properties) located in Alton Park, Cowart Place, Jefferson Heights and Southside Gardens. Sample locations appear on Figures 1 - 4 and are summarized in Table 1.

Sample collection and analysis activities were in accordance with the *Quality Assurance Project Plan (QAPP), Southside Chattanooga Lead Site, April 26, 2018*, *Sample and Analysis Plan (SAP) Southside Chattanooga Lead Site, May 7, 2018,* and *SESD Operating Procedure for Soil Sampling*, SESDPROC-300-R3. The Site-Specific Screening Level for lead in residential surface soil is 360 mg/kg. The Removal Action Level is 1,200 mg/kg.

The complete Final Analytical Reports with all quality control data and data qualifiers are attached in Appendix A. The Chain of Custody form is attached in Appendix B. The field sampling, measurement, and calibration logbooks are attached in Appendix C.

Sampling and Analytical Methodology

EPA collected samples using incremental sampling methodology (ISM). All samples were analyzed for lead using a Niton XL3t 955 Ultra X-Ray Fluorescence (XRF) in accordance with EPA Method 6200, the *SESD Operating Procedure for Field X-Ray Fluorescence Measurement*, SESDPROC-107-R4 and the EPA Region 4, Superfund Division, *Superfund X-Ray Fluorescence Field Operations Guide*. XRF data are summarized in Table 2.

At each decision unit (property), a composite sample was collected using a stainless-steel soil coring device or hand auger. If a garden or playground was present at the property, it was treated as separate decision unit and an additional sample was collected. Samples were collected from 0-4 inches below ground surface. Soil was placed in an aluminum or glass pan and mixed using a stainless-steel spoon.

With the exception of Stations CP042-164, CP140, JH011 and JH104, samples consisted of 30 aliquots. Station CP042-164 consisted of 20 aliquots due to the small size of the area sampled. Two three-point composite samples were collected with stainless-steel hand augers at Station CP140 due to the presence of gravel. The garden sample collected at Station JH011 consisted of 25 aliquots due to the small size and the sample collected at Station JH104 consisted of 26 aliquots due to the small size and presence of artificial turf on the property.

Each soil sample station was labeled using an alphanumeric system that identifies the general neighborhood area and location sampled. Each station was identified with a two-letter abbreviation of the neighborhood, followed by the designated property number (3-4 digits). Sample IDs included a media code of "SF", corresponding to surface soil and a two-letter abbreviation for the property area sampled: Entire Yard (EY), Front Yard (FY), Back Yard (BY), Side Yard (SD), or Garden (GD). The field duplicate sample was designated with an X.

Four confirmation soil samples were collected during the investigation. Confirmation samples were analyzed at the SESD laboratory in Athens, Georgia in accordance with the U.S. EPA, Region 4, *SESD Analytical Services Branch Laboratory Operations and Quality Assurance Manual*, April 2018. Samples were analyzed for lead using analytical method EPA 200.8.

XRF Measurements and Sieving:

After collection and mixing, a portion of the sample was placed in a plastic bag and the moisture content was measured using a DSMM500 Soil Moisture Meter. Following the measurement, soil samples with a moisture content below ten percent were analyzed for lead using the XRF.

During the field event, XRF results were compared to the Site-Specific Screening Level and Removal Action Level. Samples with XRF results near the Site-Specific Screening Level or Removal Action Level were sieved using a 0.15 millimeter (mm) (No. 100) disposable sieve and

reanalyzed. Specifically, samples were sieved when the XRF readings ranged between 270 mg/kg - 360 mg/kg or 1,000 mg/kg - 1,200 mg/kg. One sample (SG091SFBY) was sieved during the field event. The sieved sample is designated in the data tables with a sample ID ending in S-100. It should be noted that, during the field event, the mean lead concentration was inadvertently used instead of the 95% Upper Confidence Level (t-UCL) concentration when determining if a sample should be sieved. This resulted in two samples, collected at Stations JH082 and AP538, not being sieved. Station JH082 will not be resampled since the sample was submitted for laboratory confirmation. Station AP538 will be resampled.

Analytical Results

Four neighborhoods were sampled during the field event. The XRF results (95% Upper Confidence Level) were compared to the Site-Specific Screening Level (360 mg/kg) and Removal Action Level (1,200 mg/kg). Overall, six samples, collected from five stations, exceeded the Site-Specific Screening Level and are summarized below. No samples exceeded the Removal Action Level.

Station ID	Sample ID	Property Address	95% t-UCL Lead (mg/kg)
AP335	AP335SFEY	3741 Dorris Street	**419**
CP140	CP140SFGD	1921 Emerson Drive	**906**
SG027	SG027SFEY	109 W. 26th Street	**411**
	SG027SFEYX (Field duplicate)	109 W. 26th Street	**431**
SG088	SG088SFEY	2616 Long Street	**477**
SG091	SG091SFBY-S100	2626 Long Street	**400**

XRF data are compared to laboratory confirmation data in Table 3. Overall, laboratory data were in close agreement with the mean XRF data. XRF results for each neighborhood are summarized below.

Alton Parke – Sample locations appear on Figure 1. Samples were collected from eight residential properties and one church (Station AP430). Overall, ten samples were collected for lead XRF analysis. One sample, collected at Station AP164, was submitted for laboratory confirmation analysis. One sample, collected at Station AP335, exceeded the Site-Specific Screening Level.

Cowart Place – Sample locations appear on Figure 2. Six samples were collected from five residential properties. Two samples, CP110SFEY and CP140SFGD, were submitted for laboratory confirmation analysis. One sample, collected at Station CP140 exceeded the Site-Specific Screening Level. Sampling information for station CP140 is summarized below.

- Two three-point composite samples were collected at Station CP140 due to the large amount of gravel at the property. One sample collected from a flower garden exceeded the Site-Specific Screening Level with lead concentrations of 906 mg/kg. A second

sample collected at the edge of the property was below the Site-Specific Screening Level (168 mg/kg).

Jefferson Heights – Sample Locations appear on Figure 3. Eight samples were collected from seven residential properties. One sample, collected at Station JH082, was submitted for laboratory confirmation analysis. The Site-Specific Screening Level was not exceeded.

Southside Gardens – Sample Locations appear on Figure 4. Samples were collected from five residential properties and one church (Stations SG008 and SG034). Overall, nine samples, including one field duplicate and one sieved sample, were analyzed for lead. Four samples, collected from three properties, exceeded the Site-Specific Screening level.

Elevated concentrations of lead were detected in both the primary (411 mg/kg) and duplicate (431 mg/kg) sample collected at Station SG027. Elevated concentrations of lead were also detected at Station SG088 (477 mg/kg) and the sieved sample collected at SG091 (400 mg/kg). The non-sieved sample collected at SG091 was just below the Site-Specific Screening Level (354 mg/kg).

Quality Assurance Results

Field quality control measures were conducted in accordance with the SESD Operating Procedure for *Field Sampling Quality Control*, SESDPROC-011-R5. XRF quality control measurements included a silica blank, medium standard, and high standard. Standards were analyzed two times per day. All standards passed verifications.

One field variability duplicate sample was collected at Station SG027 and is summarized in Table 2. The lead concentration of the primary sample and duplicate sample were in close agreement with a relative percent difference of 4.75 percent. A second field duplicate, scheduled for Station AP417, was not collected due to the presence of gravel and rocks at the sample location. The formula (|V1 - V2|) / (V1 + V2)/2) * 100 was used to calculate relative percent difference.

Table 3 compares XRF and laboratory analytical results. The relative percent difference between the XRF data (mean concentration) and the laboratory data were 1.44% (AP164), 1.09% (CP110), 23.81% (CP140) and 17.29% (JH082).

Duplicate XRF measurements were taken on the bagged samples at a rate of one in ten samples. The analytical results for the duplicate readings are summarized in Table 4. Data were compared to the lower and upper bound confidence interval. It should be noted that with 95% statistical confidence, at least five out of 100 duplicate readings are expected to be “outside” the confidence interval due to variability within the soil matrix.

Additional quality control samples included one equipment rinse blank (stainless steel soil core) and a water source blank. Quality control samples were analyzed at the SESD laboratory in Athens, Georgia. Analyses were in accordance with the U.S. EPA, Region 4, *SESD Analytical Services Branch Laboratory Operations and Quality Assurance Manual*, April 2018. Quality

control blanks were analyzed for lead using analytical method EPA 200.8. The equipment rinse and water source blank data are summarized in Table 5. Lead was not detected above the reporting level in either of the water blanks which indicates that field decontamination procedures were adequately followed.

Data Summary

Twenty-five residential properties and two churches (three properties) located in Alton Park, Cowart Place, Jefferson Heights and Southside Gardens were sampled during the week of May 14, 2018. Thirty-two surface soil samples were collected during the field event. The XRF results (95% Upper Confidence Level) and four laboratory confirmation samples were compared to the Site-Specific Screening Level (360 mg/kg) and Removal Action Level (1,200 mg/kg). Samples collected from five stations exceeded the Site-Specific Screening Level. No samples exceeded the Removal Action Level.

References

1. U.S. EPA, Region 4, SESD, *Quality Assurance Project Plan (QAPP), Southside Chattanooga Lead Site,* April 26, 2018, SESD Project Number 18-0271.
2. U.S. EPA, Region 4, SESD, *Sample and Analysis Plan (SAP) Southside Chattanooga Lead Site, May 7, 2018.*
3. U.S. EPA, Region 4, SESD, *Field Branches Quality System and Technical Procedures,* http://www.epa.gov/region4/sesd/fbqstp/index.html.
4. U.S. EPA, Region 4, SESD, *Analytical Services Branch Laboratory Operations and Quality Assurance Manual*, April 2018.
5. U.S. EPA, Region 4, Superfund Division, *Superfund X-Ray Fluorescence Field Operations Guide,* July 19, 2017 (SFDGUID-001-R0).

SITE FIGURES AND DATA TABLES
SOUTHSIDE CHATTANOOGA LEAD SITE
CHATTANOOGA, TENNESSEE
MAY 2018

This Page Intentionally Left Blank

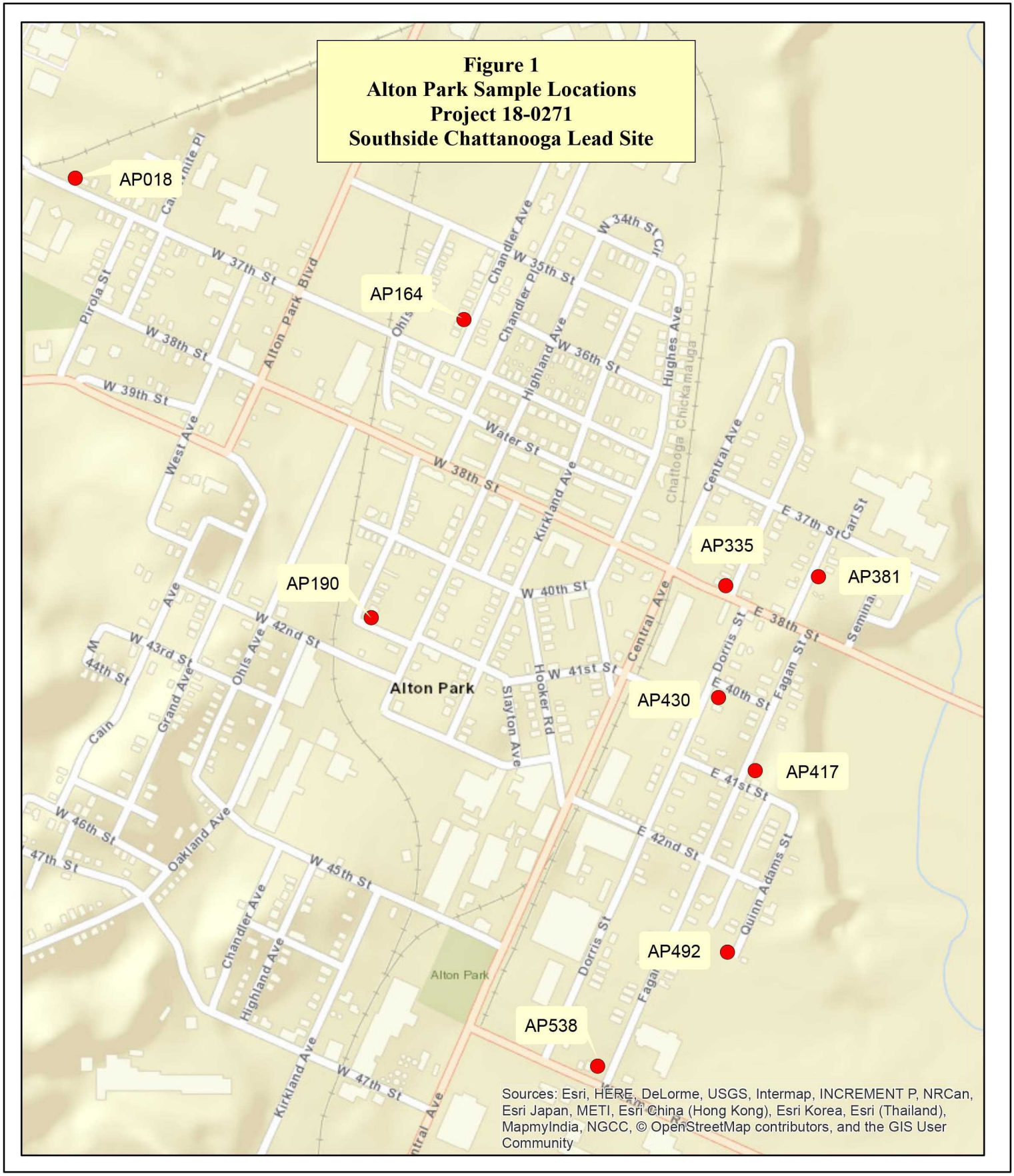


Figure 1
Alton Park Sample Locations
Project 18-0271
Southside Chattanooga Lead Site
AP018
AP164
AP190
AP335
AP381
AP430
AP417
AP492
AP538
Alton Park
W 37th St
W 38th St
W 39th St
W 36th St
W 35th St
W 34th St
W 40th St
W 41st St
W 42nd St
W 43rd St
W 44th St
W 45th St
W 46th St
W 47th St
E 37th St
E 38th St
E 40th St
E 41st St
E 42nd St
Alton Park Blvd
Chandler Ave
Chandler Pl
Highland Ave
Hughes Ave
Water St
Kirkland Ave
Central Ave
West Ave
Ohls Ave
Grand Ave
Oakland Ave
Hooker Rd
Slayton Ave
Dorris St
Fagan St
Quinn Adams St
Carl St
Pirola St
Cain
Chattooga
Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

Figure 2
Cowart Place Sample Locations
Project 18-0271
Southside Chattanooga Lead Site

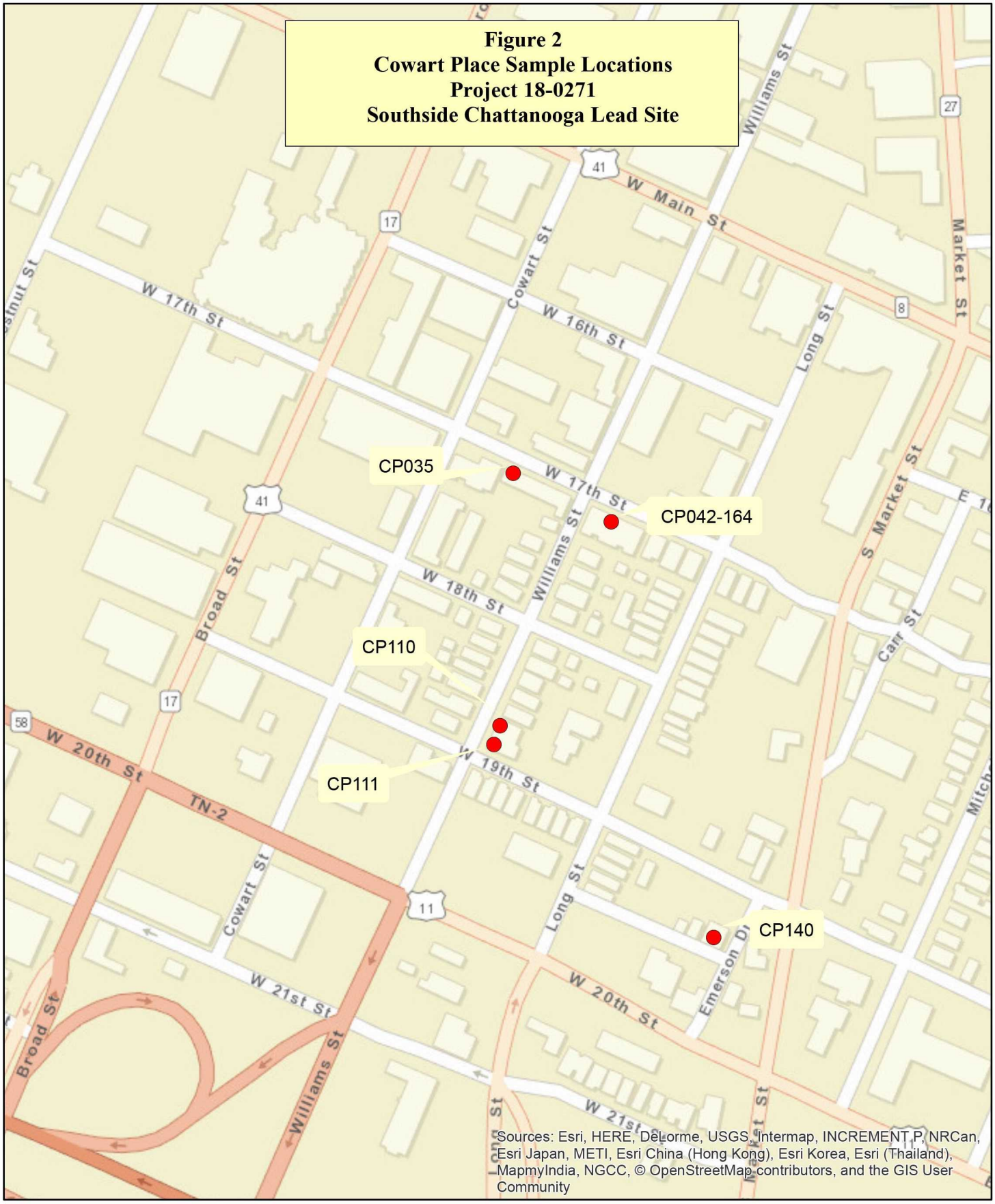


Figure 3
Jefferson Heights Sample Locations
Project 18-0271
Southside Chattanooga Lead Site

Figure 4
Southside Gardens Sample Locations
Project 18-0271
Southside Chattanooga Lead Site

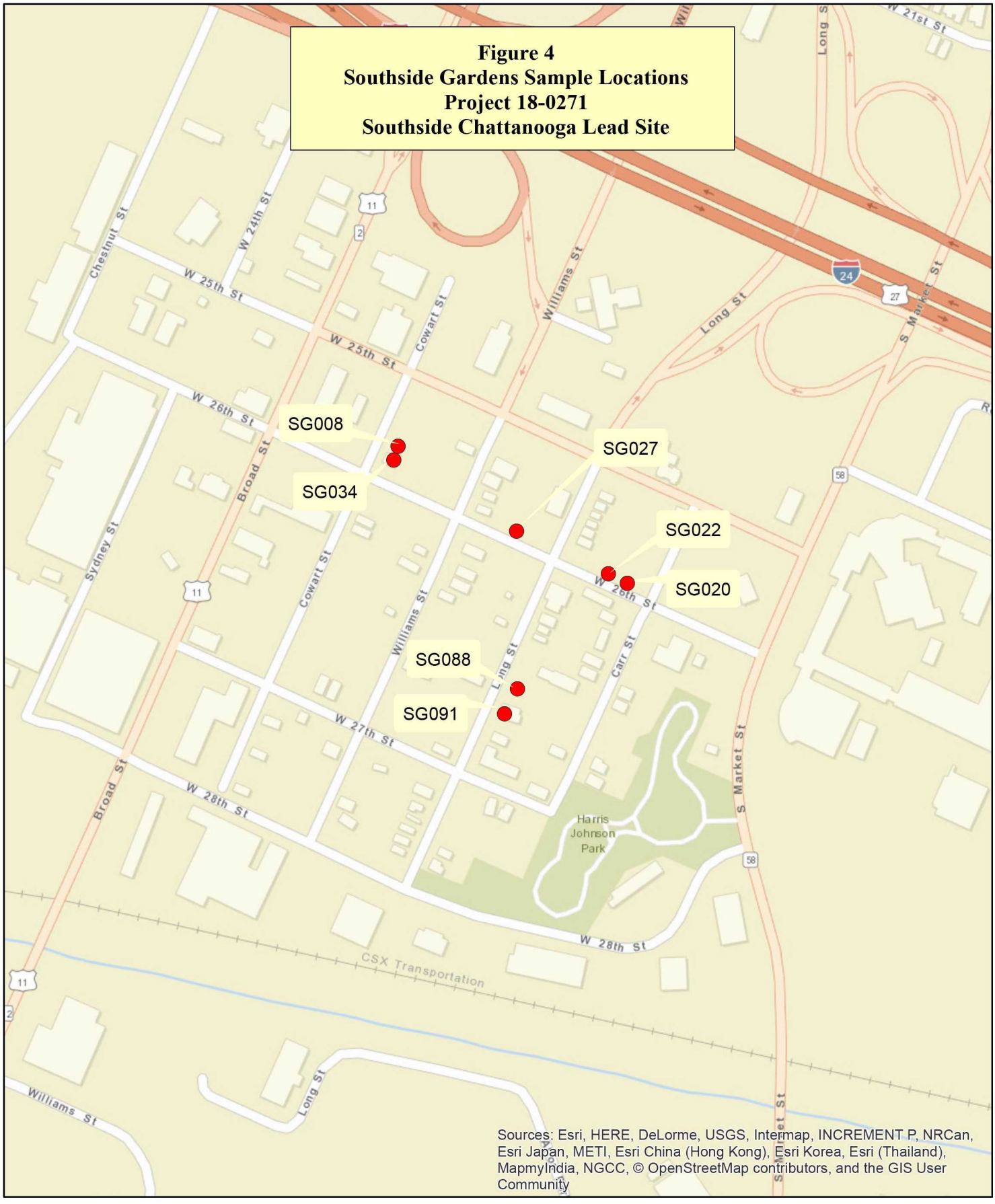


Table 1
Soil Sample Locations
Southside Chattanooga Lead Site

Station ID	Property Address	Neighborhood	Latitude	Longitude
AP018	1025-1027 W. 37th Street	Alton Park	35.011231	-85.321311
AP164	3525 Chandler Avenue	Alton Park	35.009407	-85.314324
AP190	4032 Chandler Avenue	Alton Park	35.004765	-85.315929
AP335	3741 Dorris Street	Alton Park	35.005316	-85.309811
AP381	Fagan Street	Alton Park	35.005272	-85.307877
AP417	4014 Fagan Street	Alton Park	35.002611	-85.308954
AP430	4004 Dorris Street (Church)	Alton Park	35.003508	-85.309754
AP492	4279 Quinn Adams Street	Alton Park	34.999956	-85.309808
AP538	113 Workman Road	Alton Park	34.998251	-85.311942
CP035	212 W. 17th Street	Cowart Place	35.035172	-85.310826
CP042-164	164 W. 17th Street	Cowart Place	35.034894	-85.309985
CP110	1816 Williams Street	Cowart Place	35.033626	-85.310718
CP111	1818 Williams Street	Cowart Place	35.033524	-85.310775
CP140	1921 Emerson Drive	Cowart Place	35.032410	-85.309294
JH011	609 E. 16th Street	Jefferson Heights	35.032674	-85.300195
JH029	510 E 16th Street	Jefferson Heights	35.032506	-85.301219
JH078	630 E 17th Street	Jefferson Heights	35.031316	-85.300721
JH082	656 E. 17th Street	Jefferson Heights	35.031156	-85.300299
JH104	523 E 18th Street	Jefferson Heights	35.031514	-85.302288
JH132	642 E. 19th Street	Jefferson Heights	35.029328	-85.300911
JH133	646 E. 19th Street	Jefferson Heights	35.029246	-85.300846
SG008	Cowart Street Church Parcel (North)	Southside Gardens	35.027594	-85.315237
SG034	2510 Cowart Street Church Parcel (South)	Southside Gardens	35.027383	-85.315394
SG020	W. 26th Street	Southside Gardens	35.026482	-85.312847
SG022	59 W. 26th Street	Southside Gardens	35.026550	-85.313027
SG027	109 W. 26th Street	Southside Gardens	35.026844	-85.314016
SG088	2616 Long Street	Southside Gardens	35.025491	-85.313704
SG091	2626 Long Street	Southside Gardens	35.025158	-85.314153

Confirmation Samples: Stations AP164, CP110, CP140, and JH082. Field Duplicate Sample: SG027.
Sample ID Endings: EY – Entire Yard, GD – Garden, FY – Front Yard, BY – Back Yard, SY – Side Yard

Table 2
Soil XRF Data
Southside Chattanooga Lead Site

Station ID	Sample ID	Property Address	% RSD	Mean Lead Value (mg/kg)	95% t-UCL Lead (mg/kg)	Percent Moisture
AP018	AP018SFEY	1025-1027 W. 37th Street	15.13	36.75	43	5
AP164	AP164SFEY	3525 Chandler Avenue	9.96	192.75	215	0
AP190	AP190SFEY	4032 Chandler Avenue	12.67	139.50	160	8
AP335	AP335SFEY	3741 Dorris Street	6.87	**387.50**	**419**	9
AP381	AP381SFEY	Fagan Street	11.13	71.25	81	7
AP417	AP417SFEY	4014 Fagan Street	39.15	52	64	8
AP430	AP430SFFY	4004 Dorris Street (Church)	16.18	79	94	8
AP430	AP430SFBY	4004 Dorris Street (Church)	30.95	131	170	8
AP492	AP492SFEY	4279 Quinn Adams Street	10.54	217.75	245	6
AP538	AP538SFEY	113 Workman Road	9.56	253.75	282	6
CP035	CP035SFEY	212 W. 17th Street	5.75	212	226	8
CP042-164	CP042-164SFEY	164 W. 17th Street	3.90	43.75	46	7
CP110	CP110SFEY	1816 Williams Street	5.98	161.75	173	0
CP111	CP111SFEY	1818 Williams Street	9.05	144.50	160	3
CP140	CP140SFSY	1921 Emerson Drive	7.43	154.50	168	5
CP140	CP140SFGD	1921 Emerson Drive	12.86	**787.25**	**906**	7
JH011	JH011SFEY	609 E. 16th Street	34.04	46.17	59	0
JH011	JH011SFGD	609 E. 16th Street	8.11	81.50	89	8
JH029	JH029SFEY	510 E 16th Street	6.40	125	134	8
JH078	JH078SFEY	630 E 17th Street	15.03	113.50	134	8
JH082	JH082SFEY	656 E. 17th Street	32.84	249.75	346	8
JH104	JH104SFEY	523 E 18th Street	8.67	179.25	198	6
JH132	JH132SFEY	642 E. 19th Street	4.19	49.25	52	0
JH133	JH133SFEY	646 E. 19th Street	18.46	37	45	4
SG008	SG008SFEY	Cowart Street (Church, North Parcel)	8.32	132.50	145	8
SG034	SG034SFEY	2510 Cowart Street (Church, South Parcel)	28.51	185.50	248	8
SG020	SG020SFEY	W. 26th Street	12.67	149.50	172	7
SG022	SG022SFEY	59 W. 26th Street	24.60	129.25	167	8
SG027	SG027SFEY	109 W. 26th Street	3.14	**396.75**	**411**	8
SG027	SG027SFEYX	109 W. 26th Street	12.47	**375.75**	**431**	8
SG088	SG088SFEY	2616 Long Street	5.16	**449.75**	**477**	8
SG091	SG091SFBY	2626 Long Street	4.70	335.75	354	9
SG091	SG091SFBY-S100	2626 Long Street	1.21	**394.75**	**400**	7

Bold/Yellow Shade - Site Specific Screening Level exceeded. Relative Standard Deviation (RSD), Upper Confidence Limit (UCL), and mean lead concentration calculated using internal EPA program. UCL value is rounded.

Table 3
Laboratory Confirmation and XRF Data Comparison
Southside Chattanooga Lead Site

Station ID	Sample ID	Laboratory Data (mg/kg)	Mean Lead Value XRF (mg/kg)	95% t-UCL Lead XRF (mg/kg)
AP164	AP164SFEY	190	192.75	215
CP110	CP110SFEY	160	161.75	173
CP140	CP140SFGD	1,000	787.25	906
JH082	JH082SFEY	210	249.75	346

Note: UCL values are rounded.

Table 4
Duplicate XRF Results
Southside Chattanooga Lead Site

Sample ID	1st Result of Duplicate Pair (mg/kg)	2nd Result of Duplicate Pair (mg/kg)	Lower Bound of 95% Confidence Interval (mg/kg)	Upper Bound of 95% Confidence Interval (mg/kg)	Do the duplicates agree? (Is the duplicate result within the statistical Confidence Interval?)
CP042-164SFEY	42	42	38	46	Yes
CP140SFGD	653	632	638	668	No, second result is below lower confidence interval.
CP140SFGD	646	667	631	661	No, second result is above lower confidence interval.
CP140SFGD*	782	765	765	799	Yes, see note.
CP140SFGD	773	764	757	789	Yes
AP381SFEY	69	68	64	74	Yes

Notes: All values are rounded. Initially listed as being outside the lower confidence interval. The value reported is equal to the lower confidence interval.

Table 5
Quality Assurance Data
Southside Chattanooga Lead Site

Sample ID	QA Sample	Lead (ug/L)
QAWS1	Water Source Blank	1.0 U
QARB1	Equipment Rinse Blank (Stainless-Steel Core)	1.0 U

U - The analyte was not detected at or above the reporting limit.

This Page Intentionally Left Blank

APPENDIX A

ANALYTICAL DATA REPORT
SOUTHSIDE CHATTANOOGA LEAD SITE
CHATTANOOGA, TENNESSEE
MAY 2018

Lead (18 Total Pages)

This Page Intentionally Left Blank

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

June 6, 2018

4SESD-ASB

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 18-0271, Southside Chattanooga Lead Site
Superfund Remedial

FROM: Terri White
ICS Analyst

THRU: Jeffrey Hendel, Chief
ASB Inorganic Chemistry Section

TO: Timothy Simpson

Attached are the final results for the analytical groups listed below. These analyses were performed in accordance with the Analytical Support Branch's (ASB) Laboratory Operations and Quality Assurance Manual (ASB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the ASB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Section 5.2 of the ASB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:
Physical Properties (PHYSP)		
Physical Properties	EPA 200.2 (Soil)	ISO
Total Metals (TMTL)		
Total Metals	EPA 200.8 (Soil)	ISO
Total Metals	EPA 200.8 (Water)	ISO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

---

Sample Disposal Policy

Due to limited space for long term sample storage, ASB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.

cc: Nardina Turner

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

SAMPLES INCLUDED IN THIS REPORT

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
QARB1	E182003-01	Equipment Rinse Blank	5/16/18 12:51	5/17/18 8:30
QAWS1	E182003-02	Rinse Water Blank	5/16/18 12:50	5/17/18 8:30
AP164SFEY	E182003-03	Surface Soil	5/16/18 09:20	5/17/18 8:30
CP110SFEY	E182003-04	Surface Soil	5/15/18 10:30	5/17/18 8:30
CP140SFGD	E182003-05	Surface Soil	5/15/18 14:05	5/17/18 8:30
JH082SFEY	E182003-06	Surface Soil	5/15/18 15:15	5/17/18 8:30

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

DATA QUALIFIER DEFINITIONS

U — The analyte was not detected at or above the reporting limit.

ACRONYMS AND ABBREVIATIONS

CAS — Chemical Abstracts Service

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

MDL — Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.

MRL — Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.

TIC — Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO — ASB is accredited by ISO/IEC 17025, including an amplification for forensic accreditation through ANSI-ASQ National Accreditation Board.

Refer to the certificate and scope of accreditation AT-1644 at:
http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd

NR — The EPA Region 4 Laboratory has not requested accreditation for this test.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Total Metals

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID: QARB1 **Lab ID:** E182003-01

Station ID: **Matrix:** Equipment Rinse Blank

Date Collected: 5/16/18 12:51

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7439-92-1	Lead	1.0	U	ug/L	1.0	5/31/18 9:31	6/05/18 13:01	EPA 200.8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Total Metals

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID: QAWS1 **Lab ID:** E182003-02

Station ID: **Matrix:** Rinse Water Blank

Date Collected: 5/16/18 12:50

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7439-92-1	Lead	1.0	U	ug/L	1.0	5/31/18 9:31	6/05/18 13:09	EPA 200.8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Total Metals

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID: AP164SFEY
Lab ID: E182003-03
Station ID: AP164
Matrix: Surface Soil

Date Collected: 5/16/18 9:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7439-92-1	Lead	190		mg/kg dry	2.5	5/31/18 9:37	6/05/18 13:30	EPA 200.8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Physical Properties

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID: AP164SFEY **Lab ID:** E182003-03
Station ID: AP164 **Matrix:** Surface Soil

Date Collected: 5/16/18 9:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1642941	% Solids	84		%	0.0	5/29/18 11:14	5/30/18 13:03	EPA 200.2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Total Metals

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID: CP110SFEY
Lab ID: E182003-04
Station ID: CP110
Matrix: Surface Soil

Date Collected: 5/15/18 10:30

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7439-92-1	Lead	160		mg/kg dry	2.5	5/31/18 9:37	6/05/18 13:33	EPA 200.8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Physical Properties

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID: CP110SFEY
Lab ID: E182003-04
Station ID: CP110
Matrix: Surface Soil

Date Collected: 5/15/18 10:30

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1642941	% Solids	85		%	0.0	5/29/18 11:14	5/30/18 13:03	EPA 200.2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Total Metals

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID: CP140SFGD
Lab ID: E182003-05
Station ID: CP140
Matrix: Surface Soil

Date Collected: 5/15/18 14:05

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7439-92-1	Lead	1000		mg/kg dry	10	5/31/18 9:37	6/05/18 13:40	EPA 200.8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Physical Properties

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID: CP140SFGD
Lab ID: E182003-05
Station ID: CP140
Matrix: Surface Soil

Date Collected: 5/15/18 14:05

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1642941	% Solids	80		%	0.0	5/29/18 11:14	5/30/18 13:03	EPA 200.2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Total Metals

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID: JH082SFEY **Lab ID:** E182003-06
Station ID: JH082 **Matrix:** Surface Soil

Date Collected: 5/15/18 15:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7439-92-1	Lead	210		mg/kg dry	2.5	5/31/18 9:37	6/05/18 13:43	EPA 200.8

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Physical Properties

Project: 18-0271, Southside Chattanooga Lead Site

Sample ID: JH082SFEY
Lab ID: E182003-06
Station ID: JH082
Matrix: Surface Soil

Date Collected: 5/15/18 15:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
E1642941	% Solids	86		%	0.0	5/29/18 11:14	5/30/18 13:03	EPA 200.2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, SESD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1805095 - M 200.2 Metals Water										
Blank (1805095-BLK1)				Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	U	1.0	ug/L							U
LCS (1805095-BS1)				Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	205.44	5.0	ug/L	200.00		103	85-115			
Matrix Spike (1805095-MS1)	**Source: E182003-01**			Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	200.76	5.0	ug/L	200.00	U	100	70-130			
Matrix Spike Dup (1805095-MSD1)	**Source: E182003-01**			Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	205.19	5.0	ug/L	200.00	U	103	70-130	2.18	20	
MRL Verification (1805095-PS1)				Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	20.235	1.0	ug/L	20.000		101	65-135			MRL-2
MRL Verification (1805095-PS2)				Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	1.0307	1.0	ug/L	1.0000		103	65-135			MRL-2
Batch 1805096 - M 200.2 Metals Soil										
Blank (1805096-BLK1)				Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	U	0.10	mg/kg dry							U
Blank (1805096-BLK2)				Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	U	0.10	mg/kg dry							U
LCS (1805096-BS1)				Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	99.237	1.2	mg/kg dry	100.00		99.2	85-115			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, SESD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1805096 - M 200.2 Metals Soil										
Matrix Spike (1805096-MS1)	**Source: E182003-04**			Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	259.07	2.5	mg/kg dry	99.980	164.77	94.3	70-130			
Matrix Spike Dup (1805096-MSD1)	**Source: E182003-04**			Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	270.17	2.5	mg/kg dry	99.285	164.77	106	70-130	4.19	20	
MRL Verification (1805096-PS1)				Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	2.0345	0.10	mg/kg dry	2.0000		102	65-135			MRL-3
MRL Verification (1805096-PS2)				Prepared: 05/31/18 Analyzed: 06/05/18						
EPA 200.8										
Lead	0.10525	0.10	mg/kg dry	0.10000		105	65-135			MRL-3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Physical Properties (PHYSP) - Quality Control

US-EPA, Region 4, SESD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1805090 - M % Solids										
Duplicate (1805090-DUP1)		**Source: E182003-05**		Prepared: 05/29/18 Analyzed: 05/30/18						
EPA 200.2										
% Solids	78.666	0.0	%		79.892			1.55	10	

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Science and Ecosystem Support Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 18-0271
Project: 18-0271, Southside Chattanooga Lead Site - Reported by Terri White

Notes and Definitions for QC Samples

U	The analyte was not detected at or above the reporting limit.
MRL-2	MRL verification for Non-Potable Water matrix
MRL-3	MRL verification for Soil matrix

APPENDIX B

CHAIN OF CUSTODY
SOUTHSIDE CHATTANOOGA LEAD SITE
CHATTANOOGA, TENNESSEE
MAY 2018

This Page Intentionally Left Blank

E182003

SESD Project Number 18-0271

USEPA Region 4 COC (REGION COPY)
DateShipped: 5/17/2018
CarrierName: GOV Carrier
AirbillNo:

CHAIN OF CUSTODY RECORD
Southside Chattanooga Lead Site
Project Number: 18-0271
Cooler #: 1

No: 05/16/18-0001
Lab: Region 4 Lab
Lab Contact: Mike Beall
Lab Phone: 706-355-8856

Sample Identifier	CLP Sample No.	Media/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
-04 CP110SFEY		Surface Soil/ Masters, Art	Comp.	Pb(21)	A (None) (1) ✓	CP110	05/15/2018 10:30	Field Sample
-05 CP140SFGD		Surface Soil/ Masters, Art	Comp.	Pb(21)	A (None) (1) ✓	CP140	05/15/2018 14:05	Field Sample
-06 JH082SFEY		Surface Soil/ Striggow, Brian	Comp.	Pb(21)	A (None) (1) ✓	JH082	05/15/2018 15:15	Field Sample
-01 QARB1		Equipment Rinse Blank/ Simpson, Tim	Grab	Pb(21)	A (HNO3 pH<2) (1) ✓	#R4DART#	05/16/2018 12:51	Field Sample
-03 AP164SFEY		Surface Soil/ Pruitt, Landon	Comp.	Pb(21)	A (None) (1) ✓	AP164	05/16/2018 09:20	Field Sample
-02 QAWS1		Rinse Water Blank/ Simpson, Tim	Grab	Pb(21)	A (HNO3 pH<2) (1) ✓	#R4DART#	05/16/2018 12:50	Field Sample

Special Instructions:	**Shipment for Case Complete? N**
	Samples Transferred From Chain of Custody #
Analysis Key: Pb=Lead	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	[illegible] /SESD/FSB	5/17/18 @ 8:25	[illegible] EPA SESD ASB	5-17-18 0830	Good

This Page Intentionally Left Blank

APPENDIX C

PROJECT LOG BOOKS
SOUTHSIDE CHATTANOOGA LEAD SITE
CHATTANOOGA, TENNESSEE
MAY 2018

Field Sampling Logbook 1
Field Sampling Logbook 2
Field Sampling Logbook 3
XRF Calibration & Field Measurement Logbook
Soil Moisture Logbook

This Page Intentionally Left Blank

United States Environmental Protection Agency
Region 4
Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

SOUTHSIDE CHATTANOOGA LEAD SITE
CHATTANOOGA, TENNESSEE
SESD PROJECT NUMBER 18-0271
TIM SIMPSON, PROJECT LEADER

FIELD SAMPLING LOGBOOK 1 of 3
Inclusive Dates: May 14-16, 2018

List of personnel in logbook:

Name	Initials	Organization/Duties
Art Masters	AM	EPA, Sampler, Team Leader
Landon Pruitt	LP	EPA, Sampler
Don Fortson	DF	R4EGAT, Notes, mixing
Tim Simpson	TS	EPA, Sampler

SITE NOTES:

_____

_____

_____

Garmin [ ] Serial Number _____

Trimble [ ] SESD Instrument Number: _____

File name and back-up location (laptop, thumb drive, etc.) _____

Sample Nomenclature:

Each soil sample station will be labeled using an alphanumeric system that identifies the neighborhood and sampling location. Each station will be identified with a two-letter abbreviation of the neighborhood, followed by the designated property number (3-4 digits). Sample IDs will include a media code of "SF", corresponding to the surface soil sample collected and a two-letter abbreviation for the property area sampled (**FY**=front yard, **BY**=back yard, **SD**=side yard, **EY**=entire yard, **PG**=playground, **GD**=garden).

For example: Station ID 'EL1205' will apply to a surface soil sample collected from a residential property in the East Lake neighborhood (EL=East Lake, HP=Highland Park and OG=Oak Grove). Sample ID '**EL1205SFEY**' will apply to a surface soil sample collected from the entire yard of the EL1205 residential property. A field split sample will be designated by a "S". ***Sample ID = Station ID + SF + Area Sampled***

Soil Sampling Methodology:

Surface soil samples will be collected using the Incremental Sampling Methodology (ISM). At each decision unit (residential property), a 30-point composite sample will be collected using a stainless steel coring device. Samples will be collected from 0-4 inches below ground surface. Soil will be collected in aluminum or glass pans and mixed using a stainless steel spoon. When appropriate, samplers will place a portion of homogenized soil in a plastic bag which will be analyzed using the XRF.

Generally, a decision unit will consist of an entire residential property; however, if a property is greater than ¼ acre or if a garden or playground is present, it may be divided into additional decision units. A sample collected from an entire residential property will consist of 30 aliquots; however, additional decision units (i.e. garden and playground) are small and may consist of fewer than 30 aliquots. The number of aliquots collected from gardens and playgrounds will be determined in the field. Samplers will avoid collecting cores from areas where trash may have been burned or where cars are parked. If coring device refusal occurs before achieving a 4-inch depth, then the sampler will move the aliquot location within a 2-foot-diameter zone. Soil will be mixed in glass or aluminum pans using stainless steel spoons. Organic matter (roots, leaves, grass, etc.), rocks, and trash will be removed from the soil sample during mixing.

Table 1: Sample Locations - May 2018

Station ID	Property Address	Neighborhood	Latitude	Longitude	Comment
AP018	1025-1027 W. 37th Street	Alton Park	35.011231	-85.321311	
AP335	3741 Dorris Street	Alton Park	35.005316	-85.309811	
AP164	3525 Chandler Avenue	Alton Park	35.009407	-85.314324	Confirmation Sample
AP190	4032 Chandler Avenue	Alton Park	35.004765	-85.315929	
AP417	4014 Fagan Street	Alton Park	35.002611	-85.308954	Field Duplicate
AP381	Fagan Street	Alton Park	35.005272	-85.307877	
AP492	4279 Quinn Adams Street	Alton Park	34.999956	-85.309808	
AP538	113 Workman Road	Alton Park	34.998251	-85.311942	
AP430	4004 Dorris Street	Alton Park	35.003508	-85.309754	Church
CP042-164	164 W. 17th Street	Cowart Place	35.034894	-85.309985	
CP035	212 W. 17th Street	Cowart Place	35.035172	-85.310826	
CP110	1816 Williams Street	Cowart Place	35.033626	-85.310718	Confirmation Sample
CP111	1818 Williams Street	Cowart Place	35.033524	-85.310775	
CP140	1921 Emerson Drive	Cowart Place	35.032410	-85.309294	
SG091	2626 Long Street	Southside Gardens	35.025158	-85.314153	Back Yard Only
SG088	2616 Long Street	Southside Gardens	35.025491	-85.313704	
SG027	109 W. 26th Street	Southside Gardens	35.026844	-85.314016	Field Duplicate
SG022	59 W. 26th Street	Southside Gardens	35.026550	-85.313027	
SG020	W. 26th Street	Southside Gardens	35.026482	-85.312847	
SG034	2510 Cowart Street	Southside Gardens	35.027383	-85.315394	
SG008	Church Parcel (north)	Southside Gardens	35.027594	-85.315237	
JH073	1701 Jefferson Street	Jefferson Heights	35.031563	-85.301260	
JH132	642 E. 19th Street	Jefferson Heights	35.029328	-85.300911	
JH133	646 E. 19th Street	Jefferson Heights	35.029246	-85.300846	
JH104	523 E 18th Street	Jefferson Heights	35.031514	-85.302288	
JH082	656 E. 17th Street	Jefferson Heights	35.031156	-85.300299	Confirmation Sample
JH078	630 E 17th Street	Jefferson Heights	35.031316	-85.300721	
JH011	609 E. 16th Street	Jefferson Heights	35.032674	-85.300195	
JH029	510 E 16th Street	Jefferson Heights	35.032506	-85.301219	

Sample ID = Station ID + SF + Area Sampled (**FY**=front yard, **BY**=back yard, **SD**=side yard, **EY**=entire yard, **PG**=playground, **GD**=garden). X=Field Duplicate.

Date: 5/14/18 **Station ID:** SG034

Property Address: 2510 Cowart St.

Description: front half of church parcel

Sample Team (Initials): ZP **Duties:** notes, soil mixing
AM **Duties:** sample collection
_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* — N *Longitude* — W

GPS Operator: _____ GPS Accuracy ---

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

light to medium brown clayey loam with minimal coal (black) like pieces

Foundry Material Present: *Yes or No*

Other pertinent information (weather conditions, etc.):

hot, humid

Field Split: *Yes or* (No)

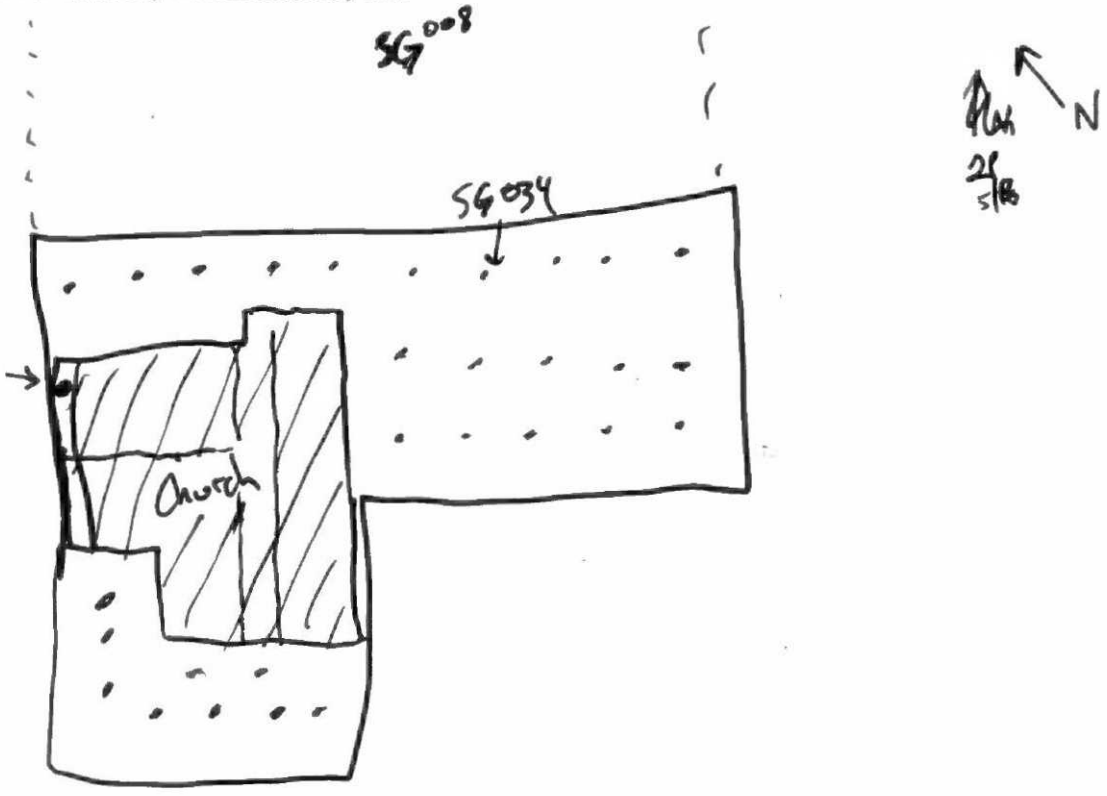
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5/14/18 Station ID: SG034

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
SG034SFEY ~~0518~~ 5/18	1350	AM	30	Entire Yard

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/14/18 **Station ID:** SG020

Property Address: W 26th St.

Description: skinny party just east of 57 W 26th St.

Sample Team (Initials): JP **Duties:** notes, soil mixing
AM **Duties:** soil core collection
_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* — N *Longitude* — W

GPS Operator: — GPS Accuracy —

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

light to medium/red brown loamy clay w/ small black pieces, some coal like pieces and some glass (clear)

Foundry Material Present: *Yes or No*
maybe

Other pertinent information (weather conditions, etc.):

hot, humid

Field Split: *Yes or* (No)

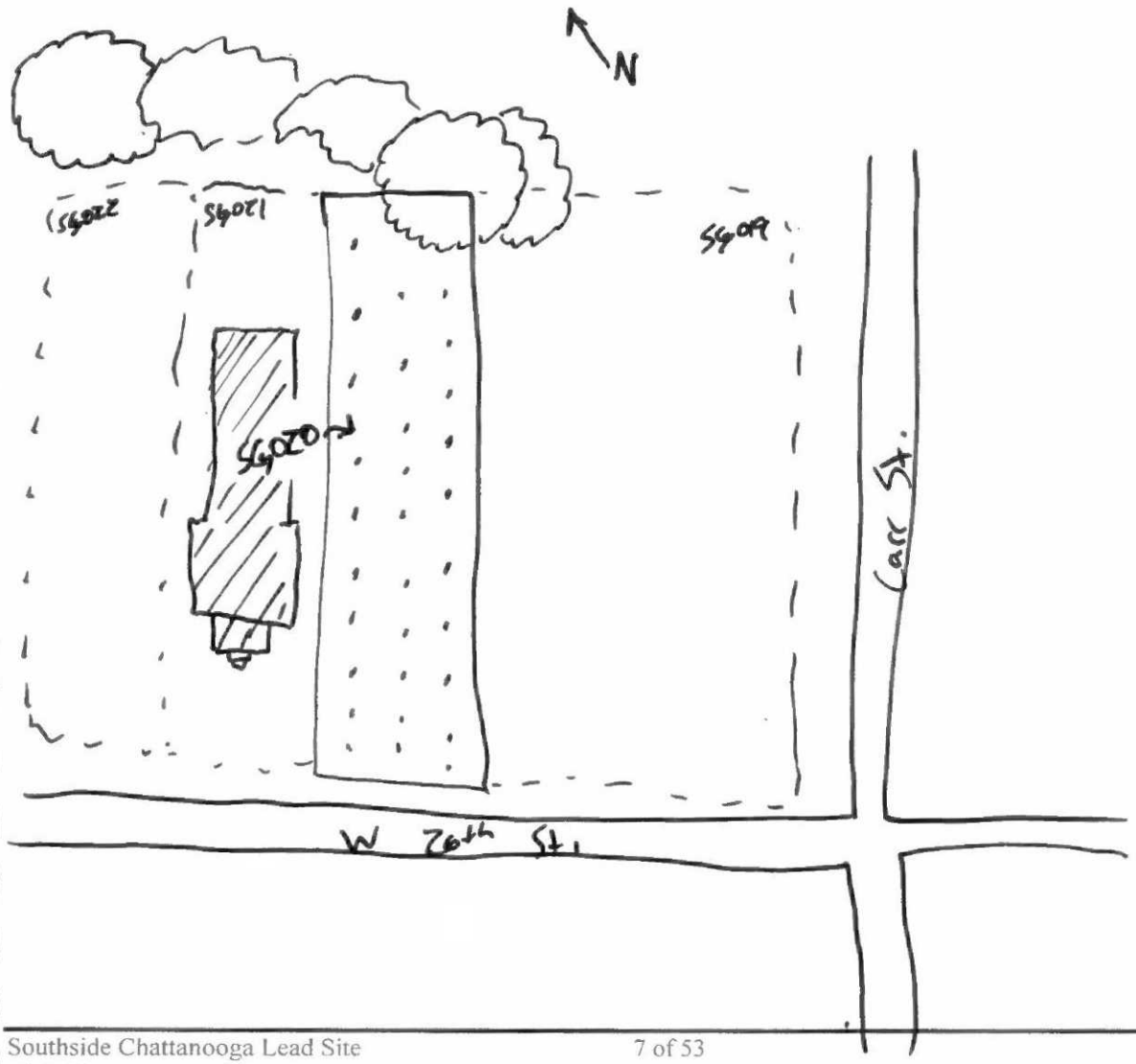
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5/14/18 Station ID: SG020

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
SG020SFEY				
SG020E 2nd slice	1500	AM	30	Entire Yard

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/14/18 **Station ID:** SG022

Property Address: 59 W. 26th St.

Description: skinny parcel to left of 57 W 26th St.

Sample Team (Initials): JP **Duties:** notes, soil mixing
AM **Duties:** sample core collector
____ **Duties:** ____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* — N *Longitude* — W

GPS Operator: — GPS Accuracy —

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

light to medium brown clay and loamy clay w/ minimal coal-like pieces

Foundry Material Present: *Yes or* (No)

Other pertinent information (weather conditions, etc.):

hot, humid

Field Split: *Yes or* (No)

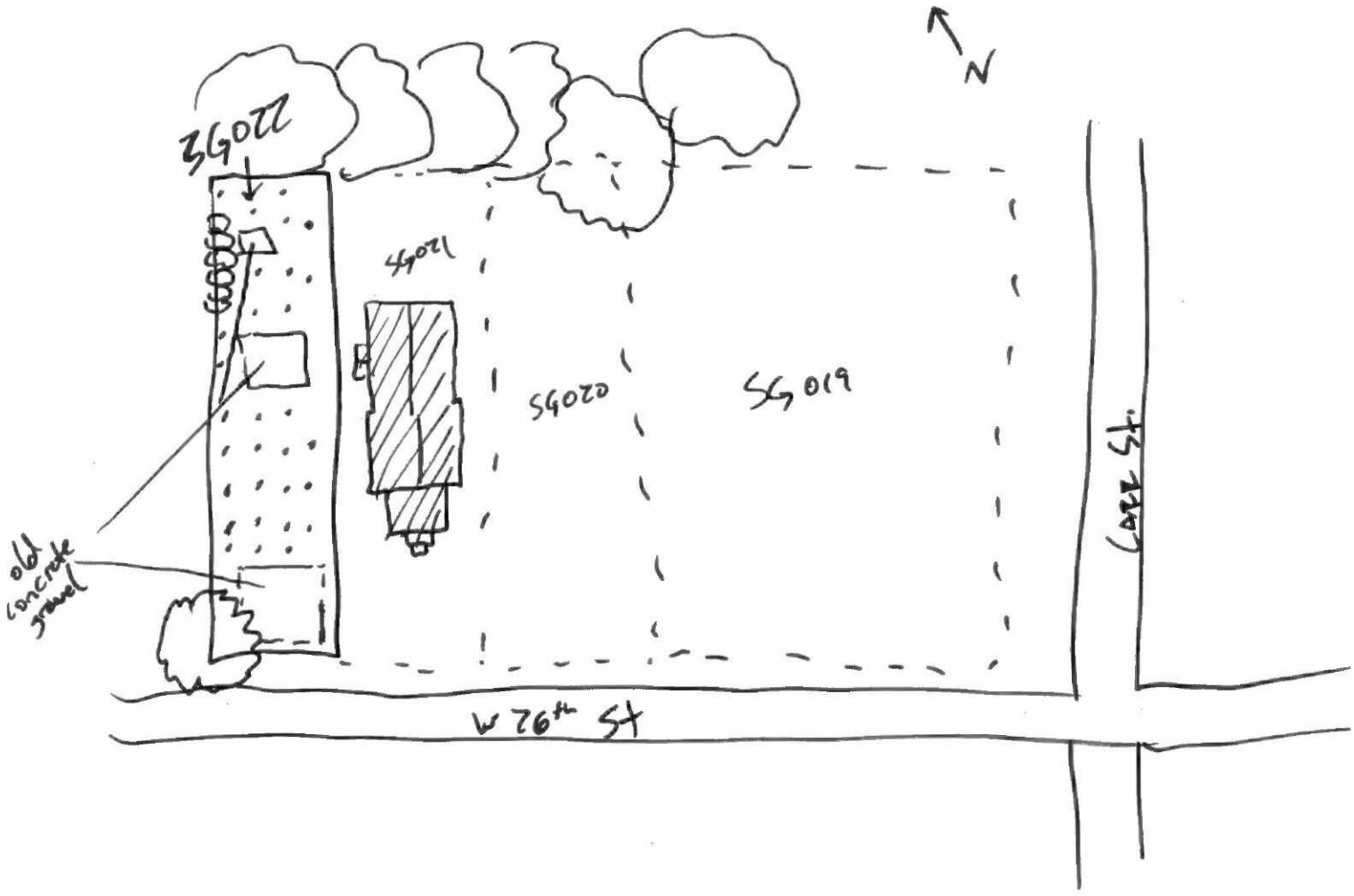
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5/14/18 Station ID: SG022

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
SG022SFEY	1600	AM	30	Entire Yard

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/15/18 **Station ID:** CP042-164

Property Address: 169 W 17th St.

Description: small flower bed between townhome and street ~3' x 12'

Sample Team (Initials): AP **Duties:** notes, soil mixing
AM **Duties:** core collections
____ **Duties:** ____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*
Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* — N *Longitude* — W

GPS Operator: — GPS Accuracy —

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):
medium brown to dark brown loamy clay with some mulch, minimal coal-like or slag-like black pieces

Foundry Material Present: *Yes or No*

Other pertinent information (weather conditions, etc.):
warm, humid

Field Split: *Yes or* (No)

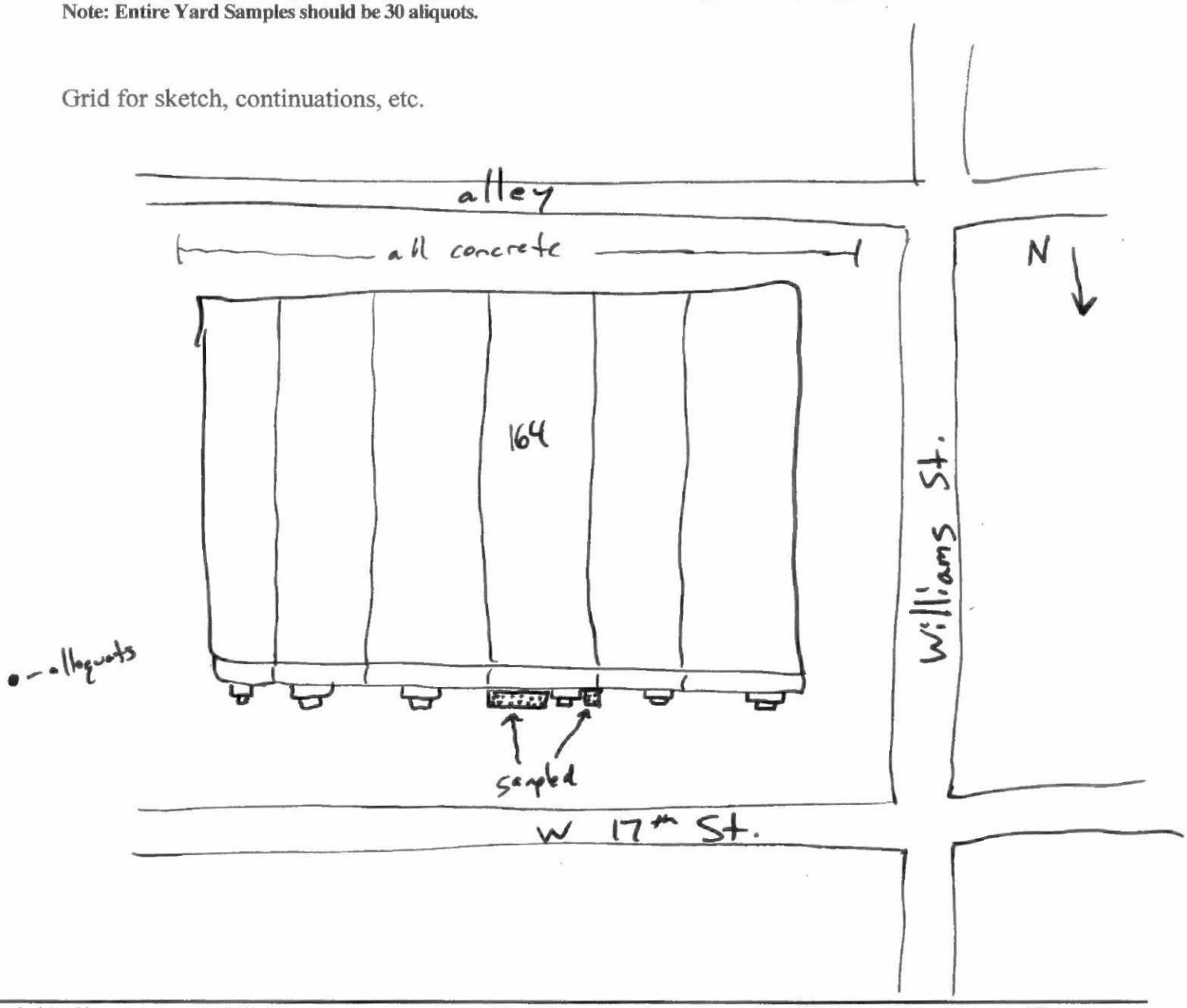
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5/15/18 Station ID: CP042-164

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
CP042-164SFEY	0830	AM	20	very small flower bed in front of town home (EY)

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/15/18 **Station ID:** CP035

Property Address: 212 W 17th St.

Description: small front (flower bed), side, and backyards; all together

Sample Team (Initials): ZP **Duties:** notes, soil mixing
AM **Duties:** soil core collection
_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

medium to dark brown clayey loam w/ some sand and v coal-like and slag-like black pieces

Foundry Material Present: minimal *Yes or No*

Other pertinent information (weather conditions, etc.):

warm, humid

Field Split: *Yes or* (No)

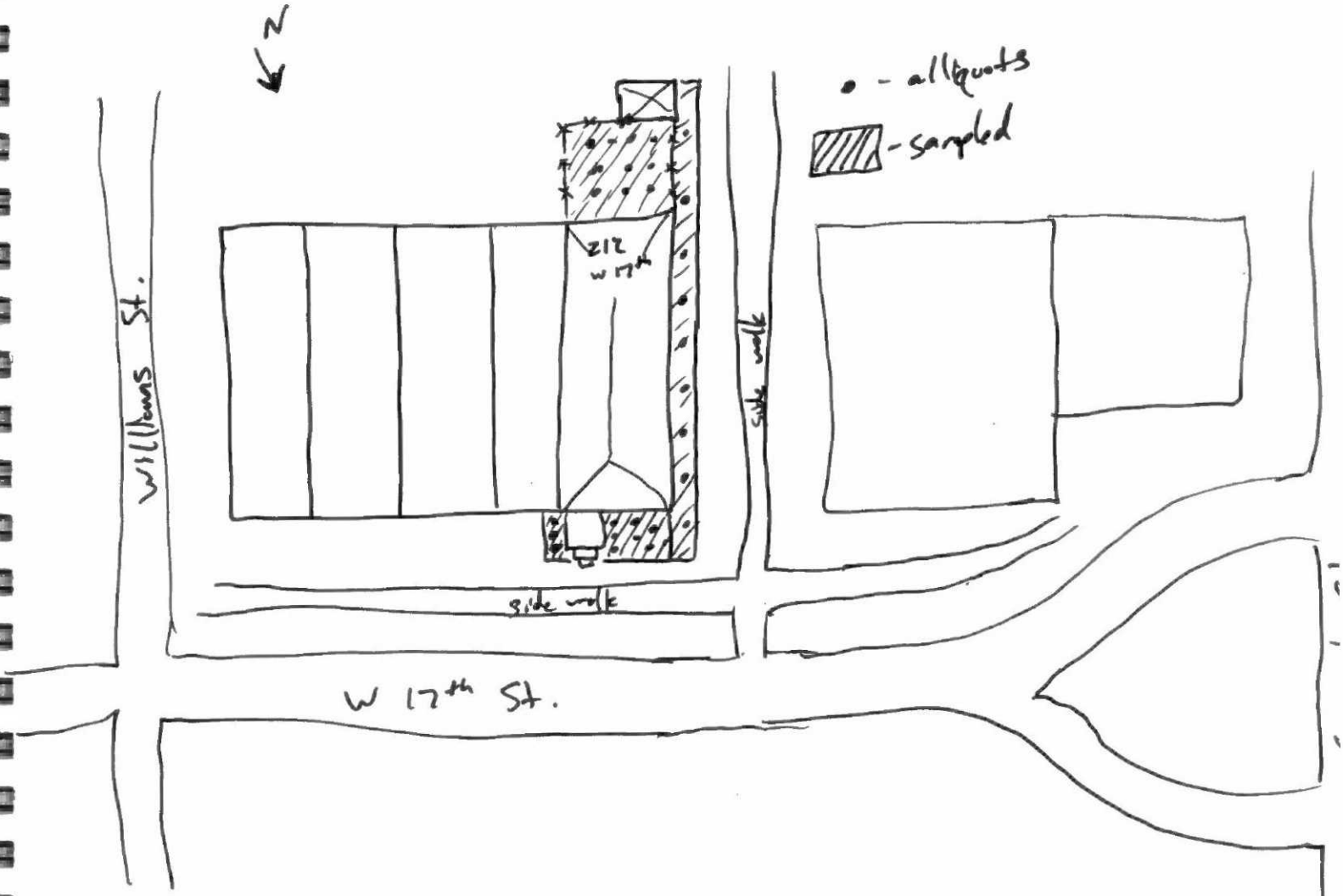
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5/15/18 Station ID: CP035

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
CP035 SF EY	0920	AM	30	entire yard (front/side/back)

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/15/18 **Station ID:** CP110

Property Address: 1816 Williams St.

Description: front/sides/and back Yard (EY) of stand-alone house

Sample Team (Initials): ZP **Duties:** notes, soil mixing

AM **Duties:** soil cores collections

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

light brown to medium/dark brown clayey loam w/ some sand, minimal coal-like and slag-like black pieces

Foundry Material Present: *Yes or No*

Other pertinent information (weather conditions, etc.):

warm, humid, overcast

Field Split: *Yes or* (No)

Potable/Irrigation Well Present: *Yes or* (No)

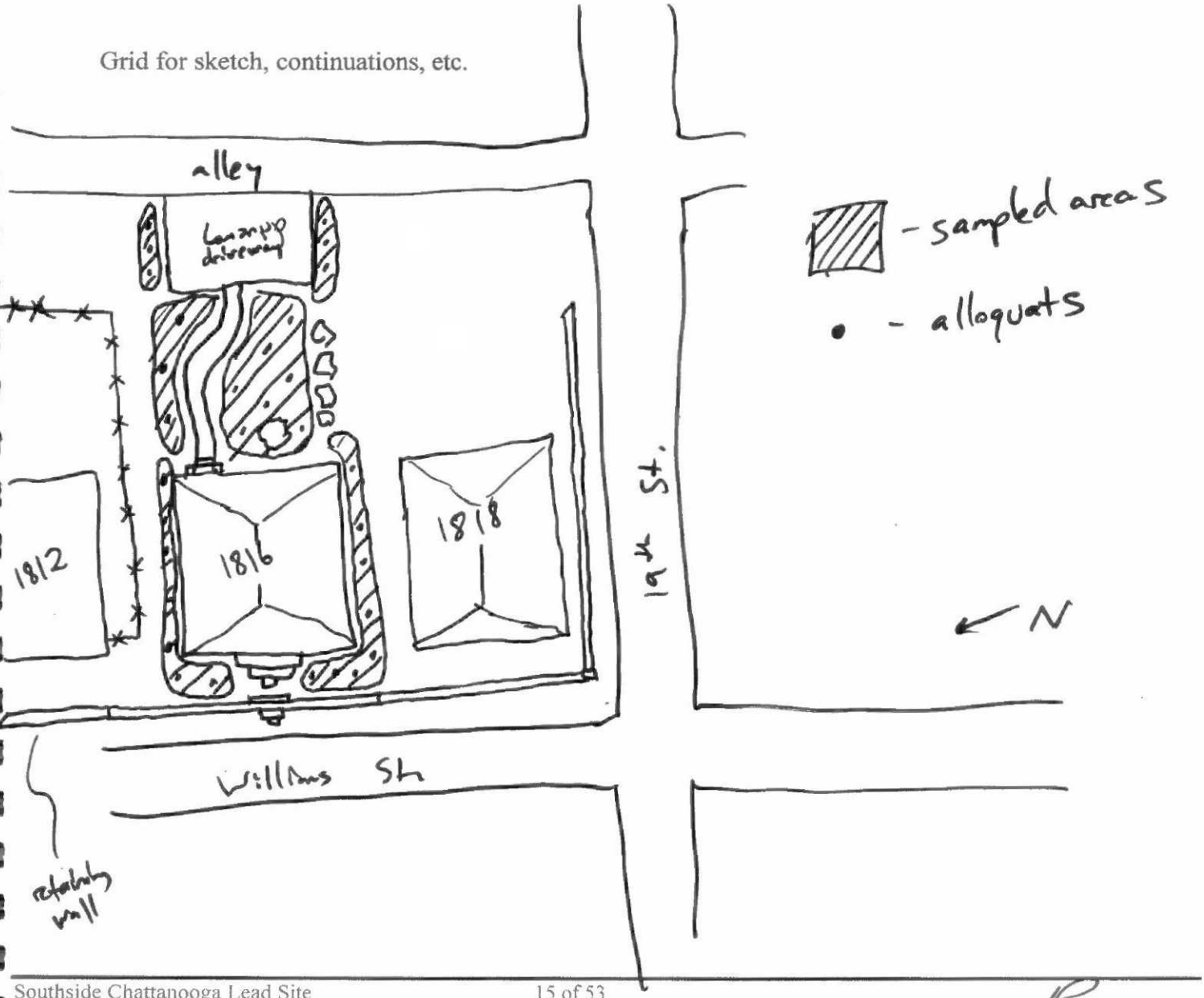
→ confirmation sample

Date: 5/15/18 Station ID: CP110

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
CP110 SF EY	1030	AM	30	Entire Yard (front, sides and back)

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/15/18 **Station ID:** CP111

Property Address: 1818 Williams St.

Description: front, side, and small back yards of stand-alone house

Sample Team (Initials): ZP **Duties:** notes, soil mixing
AM **Duties:** soil core collection
____ **Duties:** ____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures:	SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures:	SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* — N *Longitude* — W

GPS Operator: — GPS Accuracy —

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

light to medium brown loamy clay w/ minimal black coal-like and slag-like pieces

Foundry Material Present: *Yes or No*

Other pertinent information (weather conditions, etc.):

warm, humid, overcast

Field Split: *Yes or* (No)

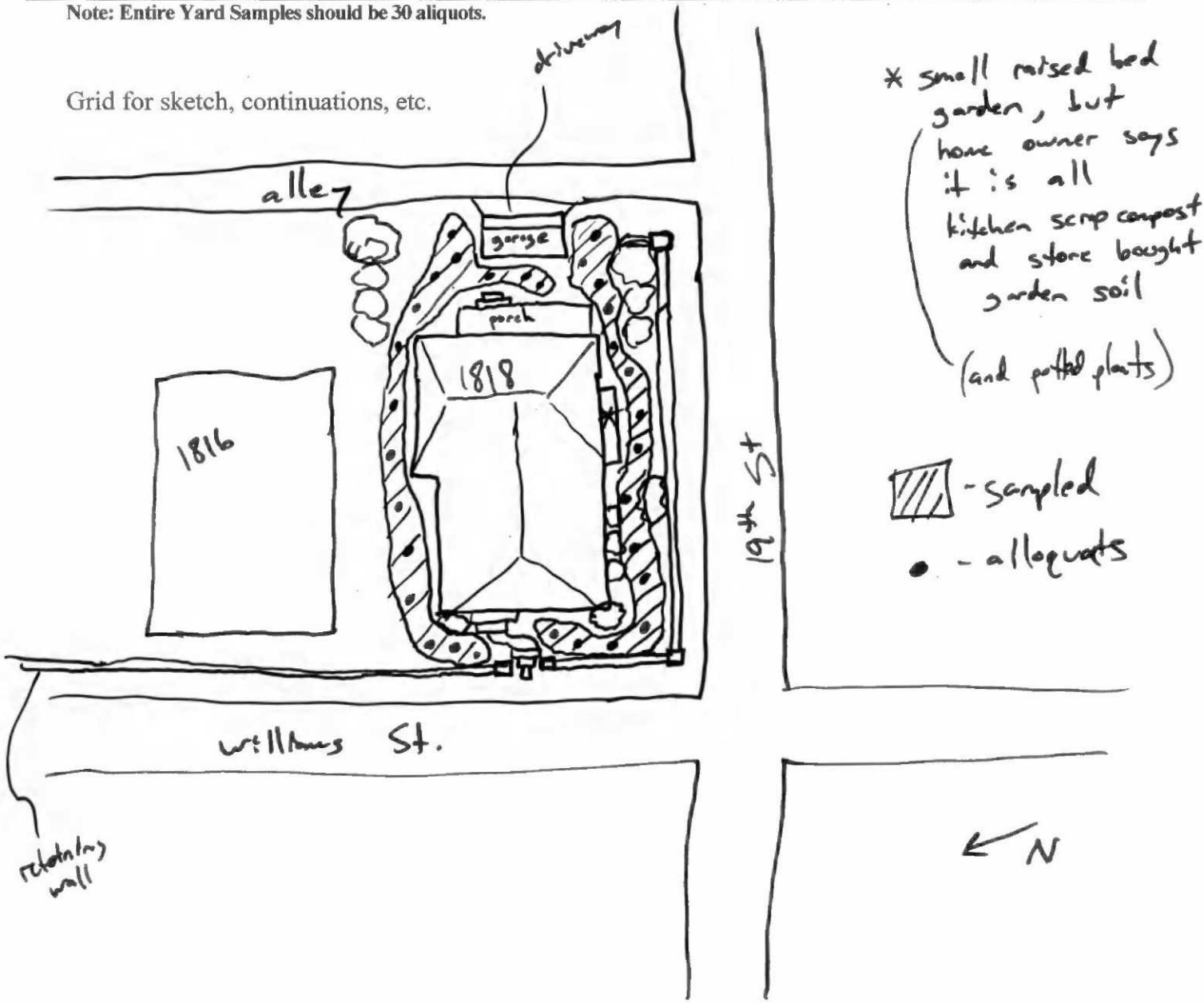
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5/15/18 Station ID: CP111

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
CP111 SF EY	1100	AM		front, back, & side yard (EY)
*				

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



* small raised bed garden, but home owner says it is all kitchen scrap compost and store bought garden soil (and potted plants)

▨ - sampled

● - aliquots

Date: 5/15/18 **Station ID:** CP140

Property Address: 1921 Emerson Dr
Description: Right half of duplex

Sample Team (Initials): TS **Duties:** sampler
AM **Duties:** sampler
DF **Duties:** mix, notes
Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*
Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [X]

GPS Coordinates: *Latitude:* — N *Longitude* — W
GPS Operator: — GPS Accuracy —
Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*
Sampling methodology defined on page 2
3pt composite with auger for garden area
3pt composite w/ auger for side yard

Description of Sample (Surface soil collected at 0-4 inches):
GD dark organic soil with some clay.
SY dark grayish brown soil, clay
Foundry Material Present: *Yes or* (No)

Other pertinent information (weather conditions, etc.):
Hot, sunny

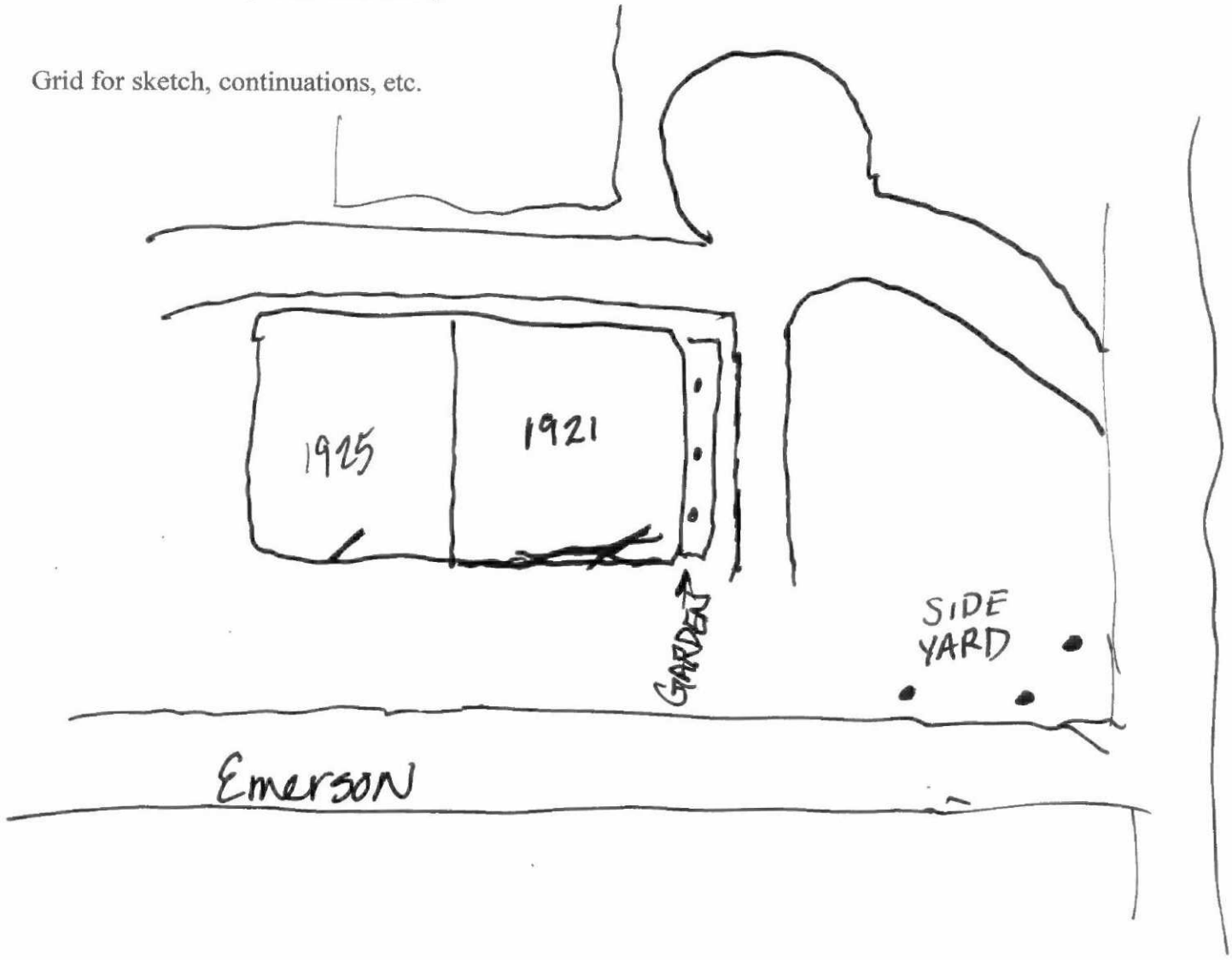
Field Split: *Yes or* (No)
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5/15/18 Station ID: CP140

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
CP140SFGD	14:05	AM	3	flower garden
CP140SFSY	14:07	TS	3	side yard

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/15/18 **Station ID:** AP018

Property Address: 1025+1027 West 37 St

Description:

Sample Team (Initials): AH **Duties:** Sampler
DF **Duties:** Mix + Notes
_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [X]

GPS Coordinates: *Latitude:* — N *Longitude* — W

GPS Operator: — GPS Accuracy —

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

dark brown organic, brownish yellow clay, light tan soil, light organic, orange clay, dark orange clay. White and dark brown sand. 5/15/18

Foundry Material Present: *Yes or* (No)

Other pertinent information (weather conditions, etc.):

Hot, sunny

Field Split: *Yes or* (No)

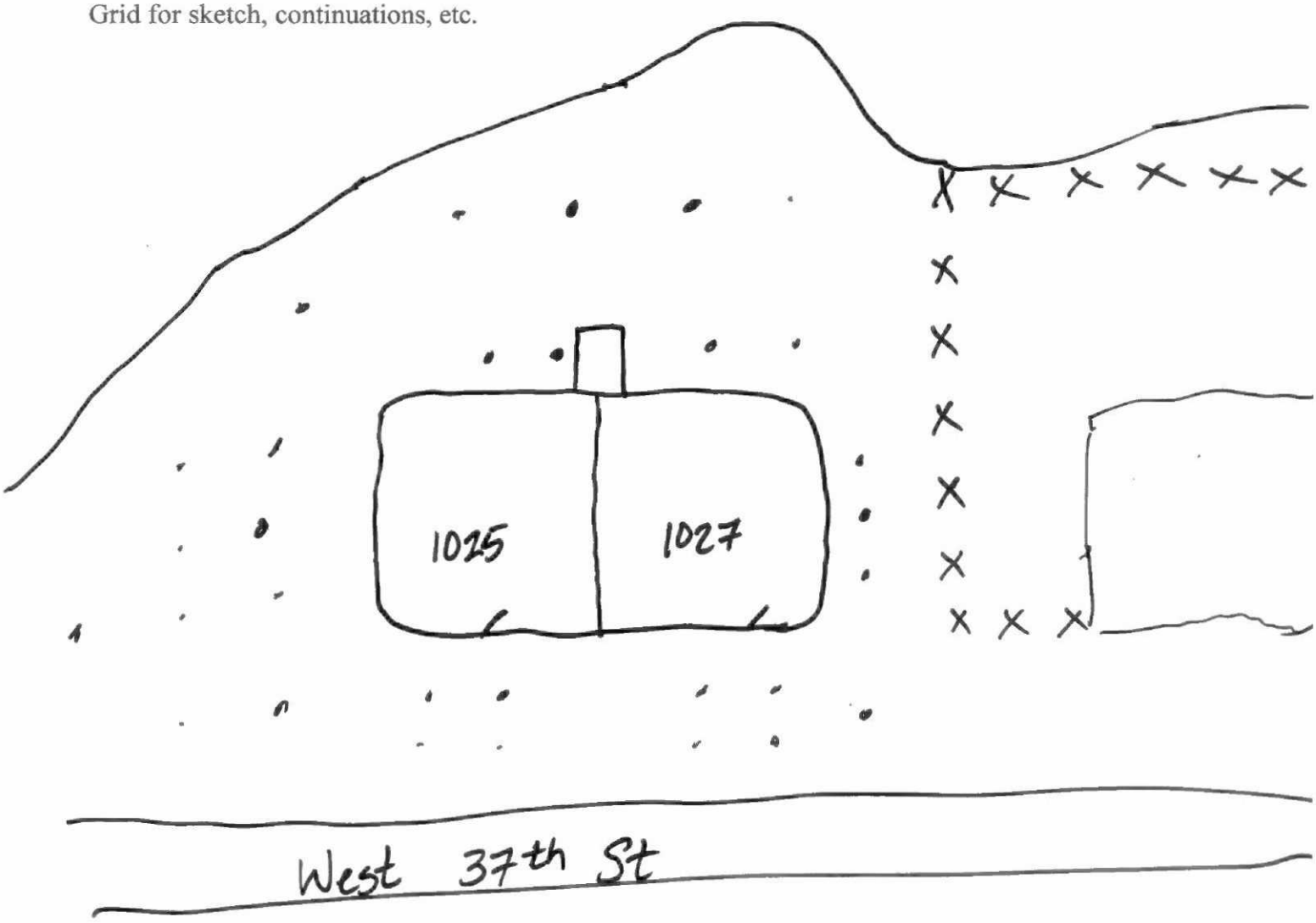
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5/15/18 Station ID: AP018

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP018SFEY	14:52	AH	30	Entire Yard

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/16/18 **Station ID:** AP538

Property Address: 113 Workman Rd

Description: 40ft wide by 140ft long empty Lot. All grass except two small trees & a light pole.

Sample Team (Initials): AM **Duties:** sampler
DF **Duties:** Mix + Notes
____ **Duties:** ____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [X]

GPS Coordinates: *Latitude:* ____ N *Longitude* ____ W

GPS Operator: ____ GPS Accuracy ____

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):
dark brown organic, yellowish orange clay, orange sand, orange clay, black charcoal like material, white chalk like soil. grayish soil, grayish clay.

Foundry Material Present: *Yes or* (No)

Other pertinent information (weather conditions, etc.):
mild, cloudy

Field Split: *Yes or* (No)

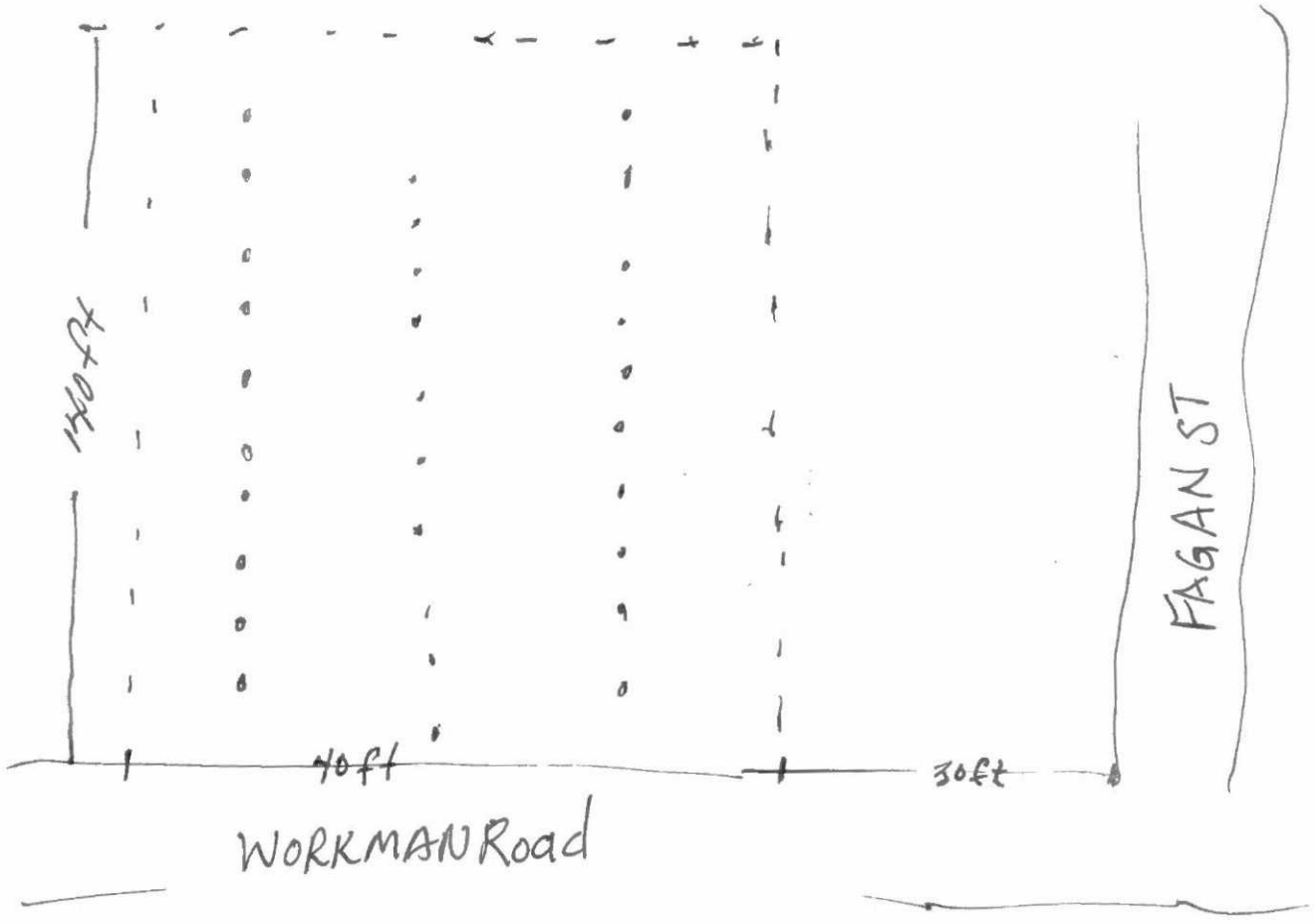
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5/16/18 Station ID: AP538SFEY DF 5/16/18

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP538SFEY				
AP538SFEY	0850	AM	30	Entire yard

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/16/18 **Station ID:** AP492

Property Address: 4279 QuiNN Adams St

Description: Empty lot at the end of street.

Sample Team (Initials): AM **Duties:** sampler

DF **Duties:** mixer, notes

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [ ]

GPS Coordinates: *Latitude:* — N *Longitude* — W

GPS Operator: — GPS Accuracy —

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

brown soil, orange clay, tan sand

Foundry Material Present: *Yes or* (No)

Other pertinent information (weather conditions, etc.):

mild, partially cloudy

Field Split: *Yes or* (No)

Potable/Irrigation Well Present: *Yes or* (No)

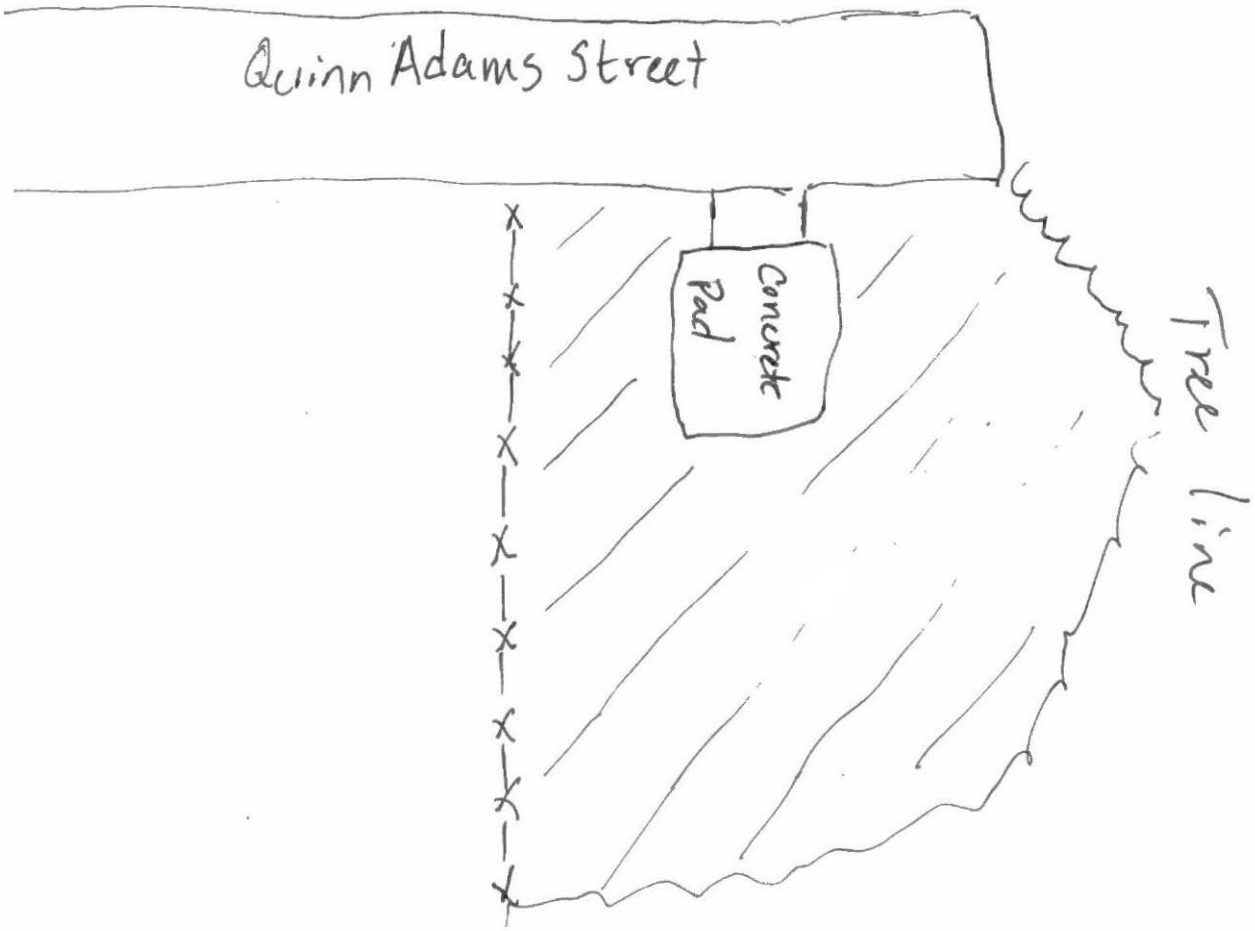
Date: 5/16/18 Station ID: AP492

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP492SFEY	09:43	AM	30	Entire yard

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.

4218



Date: 5/16/18 **Station ID:** APH30

Property Address: 4004 Dorris St

Description: Active church - "World Restoration Center Church"

Sample Team (Initials): AM **Duties:** sampler

DF **Duties:** mix, notes

Duties:

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [X]

GPS Coordinates: *Latitude:* — N *Longitude* — W

GPS Operator: — GPS Accuracy —

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

FY- brown soil, light brown soil, orange clay

Foundry Material Present: *Yes or* (No)

Other pertinent information (weather conditions, etc.):

Hot, sunny

Field Split: *Yes or* (No)

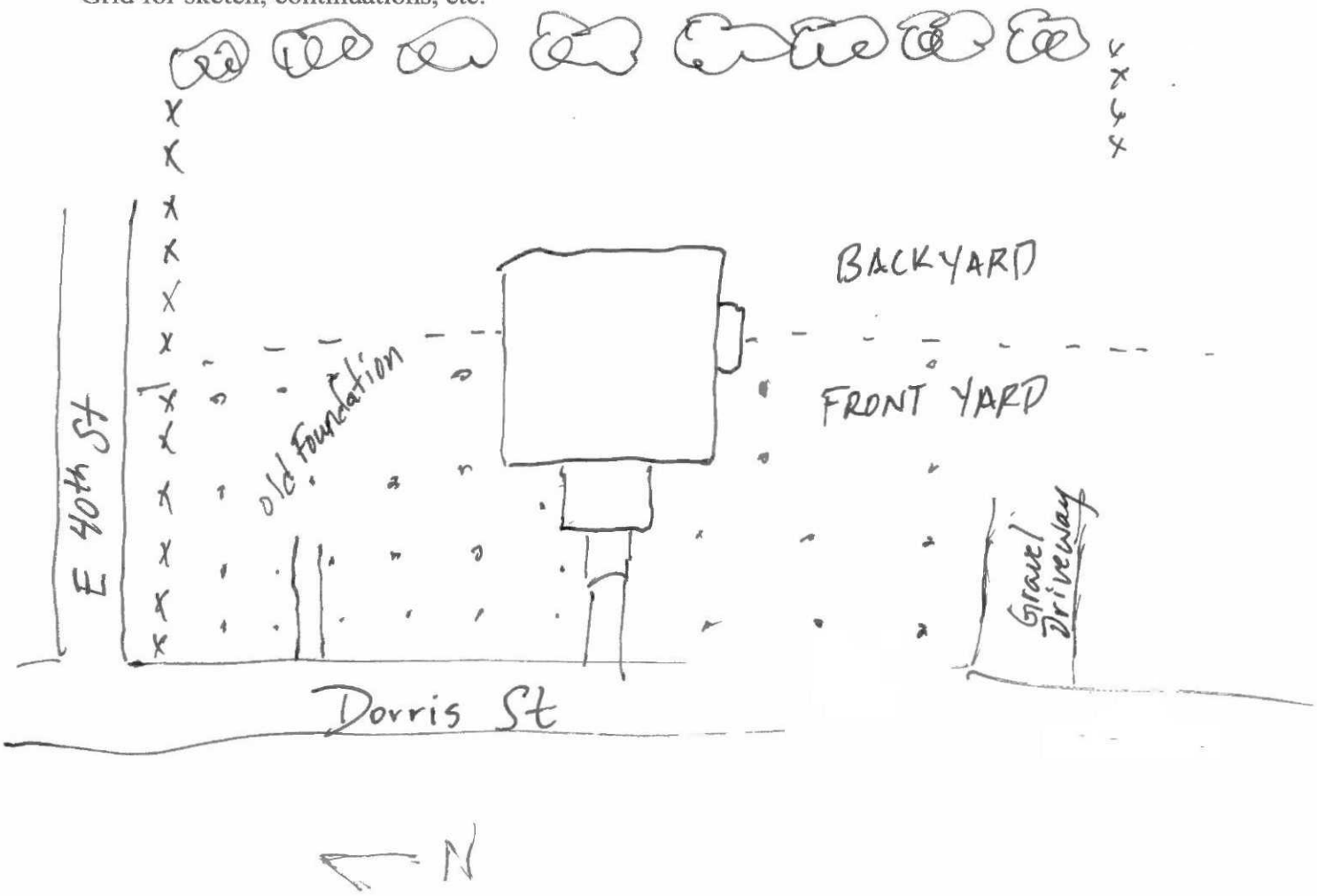
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5/16/18 Station ID: AP430

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP430 SF FY	11:20	AM	30	Front Yard
AP430 SF BY		AM	30	Back Yard Done by Brian Striggow + Michael Roberts

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/16/18 **Station ID:** AP417

Property Address: 4014 Fagan St

Description: Empty lot

Sample Team (Initials): AM **Duties:** Sampler
DF **Duties:** mix, notes
_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [X]

GPS Coordinates: *Latitude:* — N *Longitude* — W

GPS Operator: — GPS Accuracy —

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):
brown soil, orange clay, gravel, tan sand

Foundry Material Present: *Yes or* (No)

Other pertinent information (weather conditions, etc.):
Hot, cloudy

Field Split: ~~Yes~~ Duplicate DF 5/16/18 *or* (No)

Potable/Irrigation Well Present: *Yes or* (No)

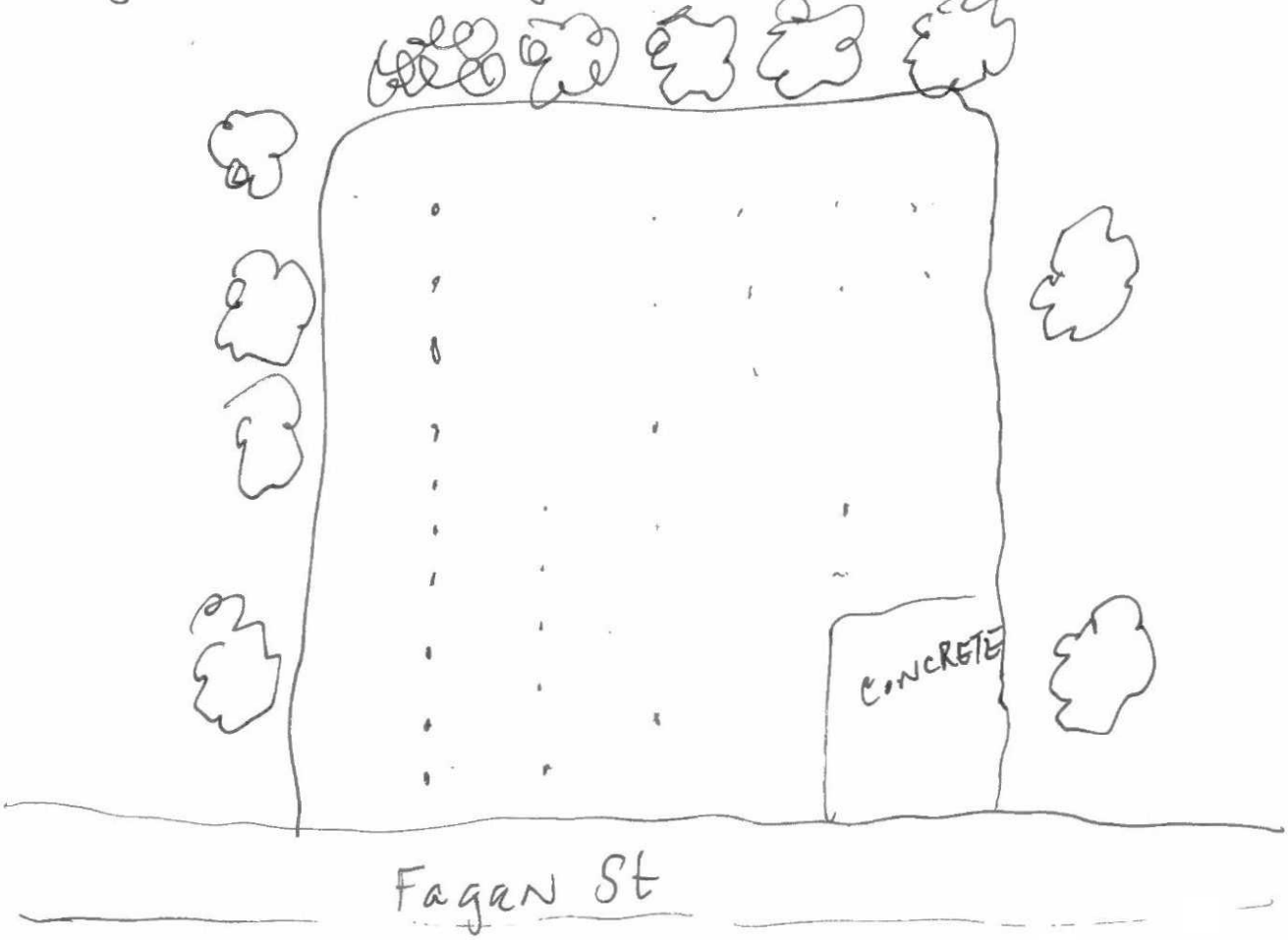
Date: 5/16/18 Station ID: AP417

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP417SFEY	14:25	AM	30	Entire Yard
~~AP417SSFEY~~ - DF 5/16/18				

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.

Lot has a lot of compacted gravel and concrete and asph
Project leader has agreed to no duplicate sample.



United States Environmental Protection Agency
Region 4
Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

SOUTHSIDE CHATTANOOGA LEAD SITE
CHATTANOOGA, TENNESSEE
SESD PROJECT NUMBER 18-0271
TIM SIMPSON, PROJECT LEADER

FIELD SAMPLING LOGBOOK 2 of 3
Inclusive Dates: 5-14-18

List of personnel in logbook:

Name	Initials	Organization/Duties
Brian Striggow	BCS	Brian Striggow, Team Leader
Michael Roberts	MR	Sampler

SITE NOTES:

_____

_____

_____

Garmin [ ] Serial Number _____

Trimble [ ] SESD Instrument Number: _____

File name and back-up location (laptop, thumb drive, etc.) _____

Sample Nomenclature:

Each soil sample station will be labeled using an alphanumeric system that identifies the neighborhood and sampling location. Each station will be identified with a two-letter abbreviation of the neighborhood, followed by the designated property number (3-4 digits). Sample IDs will include a media code of "SF", corresponding to the surface soil sample collected and a two-letter abbreviation for the property area sampled (**FY**=front yard, **BY**=back yard, **SD**=side yard, **EY**=entire yard, **PG**=playground, **GD**=garden).

For example: Station ID 'EL1205' will apply to a surface soil sample collected from a residential property in the East Lake neighborhood (EL=East Lake, HP=Highland Park and OG=Oak Grove). Sample ID '**EL1205SFEY**' will apply to a surface soil sample collected from the entire yard of the EL1205 residential property. A field split sample will be designated by a "S". ***Sample ID = Station ID + SF + Area Sampled***

Soil Sampling Methodology:

Surface soil samples will be collected using the Incremental Sampling Methodology (ISM). At each decision unit (residential property), a 30-point composite sample will be collected using a stainless steel coring device. Samples will be collected from 0-4 inches below ground surface. Soil will be collected in aluminum or glass pans and mixed using a stainless steel spoon. When appropriate, samplers will place a portion of homogenized soil in a plastic bag which will be analyzed using the XRF.

Generally, a decision unit will consist of an entire residential property; however, if a property is greater than ¼ acre or if a garden or playground is present, it may be divided into additional decision units. A sample collected from an entire residential property will consist of 30 aliquots; however, additional decision units (i.e. garden and playground) are small and may consist of fewer than 30 aliquots. The number of aliquots collected from gardens and playgrounds will be determined in the field. Samplers will avoid collecting cores from areas where trash may have been burned or where cars are parked. If coring device refusal occurs before achieving a 4-inch depth, then the sampler will move the aliquot location within a 2-foot-diameter zone. Soil will be mixed in glass or aluminum pans using stainless steel spoons. Organic matter (roots, leaves, grass, etc.), rocks, and trash will be removed from the soil sample during mixing.

Table 1: Sample Locations - May 2018

Station ID	Property Address	Neighborhood	Latitude	Longitude	Comment
AP018	1025-1027 W. 37th Street	Alton Park	35.011231	-85.321311	
AP335	3741 Dorris Street	Alton Park	35.005316	-85.309811	
AP164	3525 Chandler Avenue	Alton Park	35.009407	-85.314324	Confirmation Sample
AP190	4032 Chandler Avenue	Alton Park	35.004765	-85.315929	
AP417	4014 Fagan Street	Alton Park	35.002611	-85.308954	Field Duplicate
AP381	Fagan Street	Alton Park	35.005272	-85.307877	
AP492	4279 Quinn Adams Street	Alton Park	34.999956	-85.309808	
AP538	113 Workman Road	Alton Park	34.998251	-85.311942	
AP430	4004 Dorris Street	Alton Park	35.003508	-85.309754	Church
CP042-164	164 W. 17th Street	Cowart Place	35.034894	-85.309985	
CP035	212 W. 17th Street	Cowart Place	35.035172	-85.310826	
CP110	1816 Williams Street	Cowart Place	35.033626	-85.310718	Confirmation Sample
CP111	1818 Williams Street	Cowart Place	35.033524	-85.310775	
CP140	1921 Emerson Drive	Cowart Place	35.032410	-85.309294	
SG091	2626 Long Street	Southside Gardens	35.025158	-85.314153	Back Yard Only
SG088	2616 Long Street	Southside Gardens	35.025491	-85.313704	
~~SG027~~	109 W. 26th Street	Southside Gardens	35.026844	-85.314016	Field Duplicate
SG022	59 W. 26th Street	Southside Gardens	35.026550	-85.313027	
SG020	W. 26th Street	Southside Gardens	35.026482	-85.312847	
SG034	2510 Cowart Street	Southside Gardens	35.027383	-85.315394	
~~SG008~~	Church Parcel (north)	Southside Gardens	35.027594	-85.315237	
JH073	1701 Jefferson Street	Jefferson Heights	35.031563	-85.301260	
JH132	642 E. 19th Street	Jefferson Heights	35.029328	-85.300911	
JH133	646 E. 19th Street	Jefferson Heights	35.029246	-85.300846	
JH104	523 E 18th Street	Jefferson Heights	35.031514	-85.302288	
JH082	656 E. 17th Street	Jefferson Heights	35.031156	-85.300299	Confirmation Sample
JH078	630 E 17th Street	Jefferson Heights	35.031316	-85.300721	
JH011	609 E. 16th Street	Jefferson Heights	35.032674	-85.300195	
JH029	510 E 16th Street	Jefferson Heights	35.032506	-85.301219	

Sample ID = Station ID + SF + Area Sampled (**FY**=front yard, **BY**=back yard, **SD**=side yard, **EY**=entire yard, **PG**=playground, **GD**=garden). X=Field Duplicate.

BCS 5-14

Date: 5-14-18 **Station ID:** SG008SFEY

Property Address: Parcel N. of Hamlett Chapel

Description: Grassy lot adjacent (N) to Hamlett Chapel. Adjacent N & E lot to low shrubs.

Sample Team (Initials): BCS **Duties:** Scribe Pre-mix

MR **Duties:** Sampler Core, mix

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* not N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core 30 aliquots to 4" w/ SS split sampler

Push by foot

Description of Sample (Surface soil collected at 0-4 inches):

Med Brown Silt Loam

Foundry Material Present: (Yes) or No Small amount 1/4 - 3/4 particles, black

Other pertinent information (weather conditions, etc.):

Warm, Sunny

Field Split: *Yes or* (No)

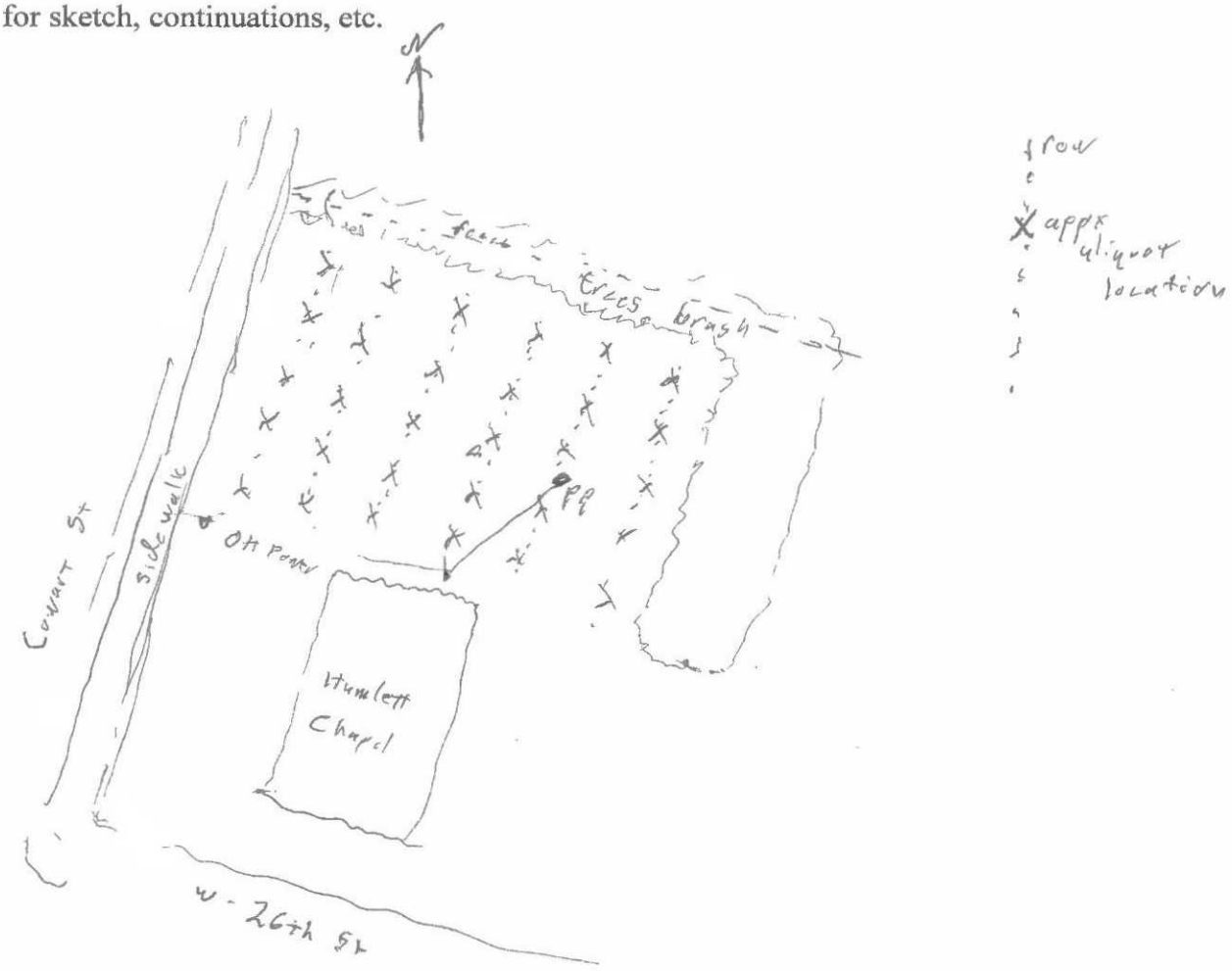
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5-14-18 **Station ID:** SG008

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
SG008SFEY	14:10	MR	30	Entire Yard

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-14-18 **Station ID:** SG027

Property Address: 109 W 26th St

Description: Grassed empty lot w/ side walk @ 26th St. frontage boundry by fence to N, driveway to W, Trees & brush to E.

Sample Team (Initials): BCS **Duties:** Scribe Pre Mix, Mix

MB **Duties:** Sampler Core, Mix

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* N/A N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core 30 aliquots to 4" w/ SS split sampler

Description of Sample (Surface soil collected at 0-4 inches):

med brn silt loam (aggregated) Some cores w/ foundry sand, Several w/ red clay. Some small broken brick

Foundry Material Present: (Yes) or No Several cores w/ black sand. Also 1/4 & 3/8 black gravel (small amt)

Other pertinent information (weather conditions, etc.):

Warm, Sunny

Field Split: (Yes) or No → colocated duplicate

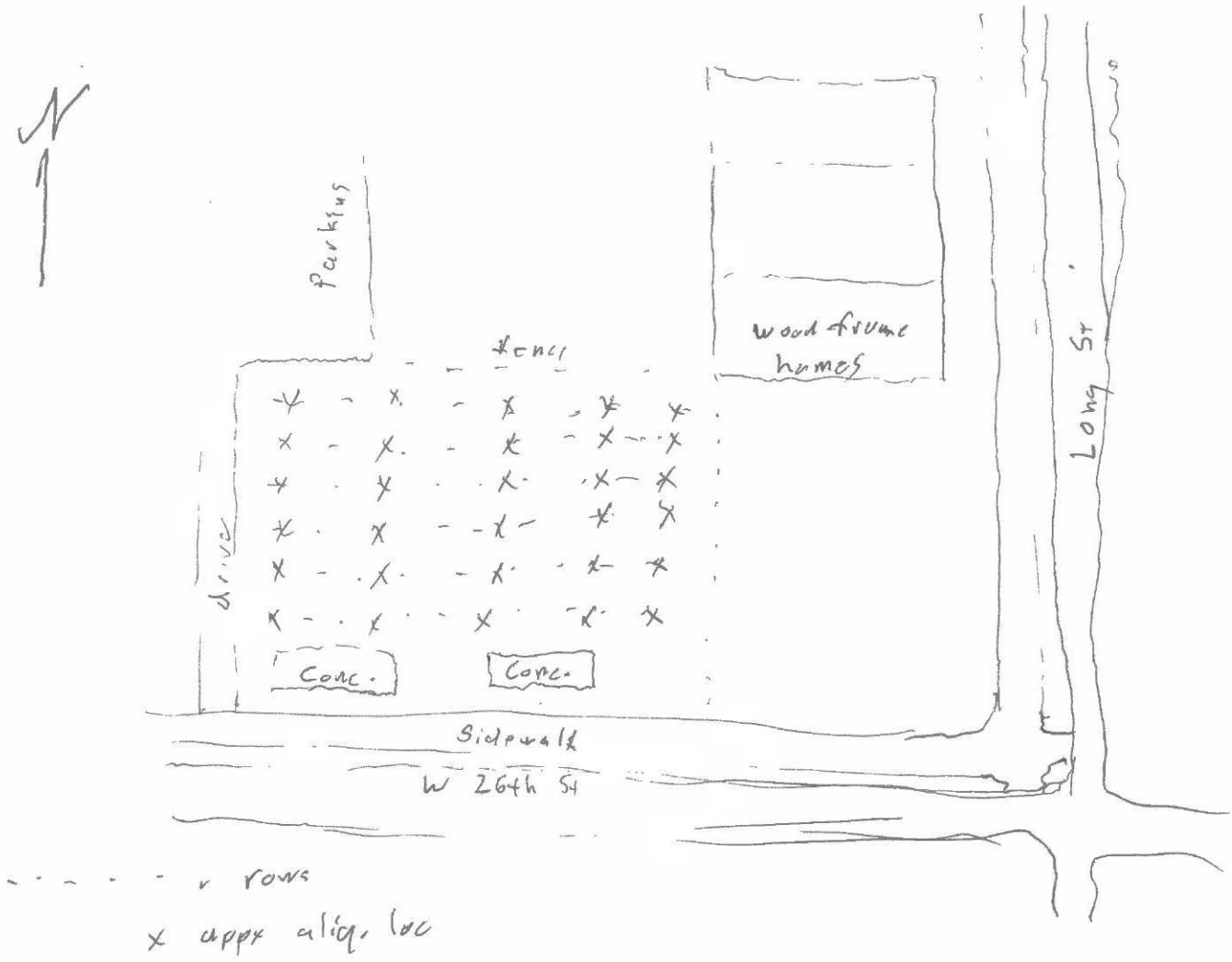
Potable/Irrigation Well Present: Yes or (No)

Date: 5-14-16 **Station ID:** SG027

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
SG027SFEY	15:40	MR	30	EY
SG027SFEYX	16:20	MR	30	BY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-14-18 **Station ID:** SG088

Property Address: 2616 Long St

Description: Grassed Lot btwn wood frame house (2626 Long) + Nazarene Baptist Church

Sample Team (Initials): BCS **Duties:** Scribe, mix

MR **Duties:** Core

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [ ]

NG

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core 30 aliquots to 4" w/ SS split sampler

Description of Sample (Surface soil collected at 0-4 inches):

Med-dk brown silt loam (aggregated)

Foundry Material Present: (Yes) or No Several cores apparently primarily foundry sand, Also several larger particles

Other pertinent information (weather conditions, etc.):

Warm, sunny

Field Split: Yes or (No)

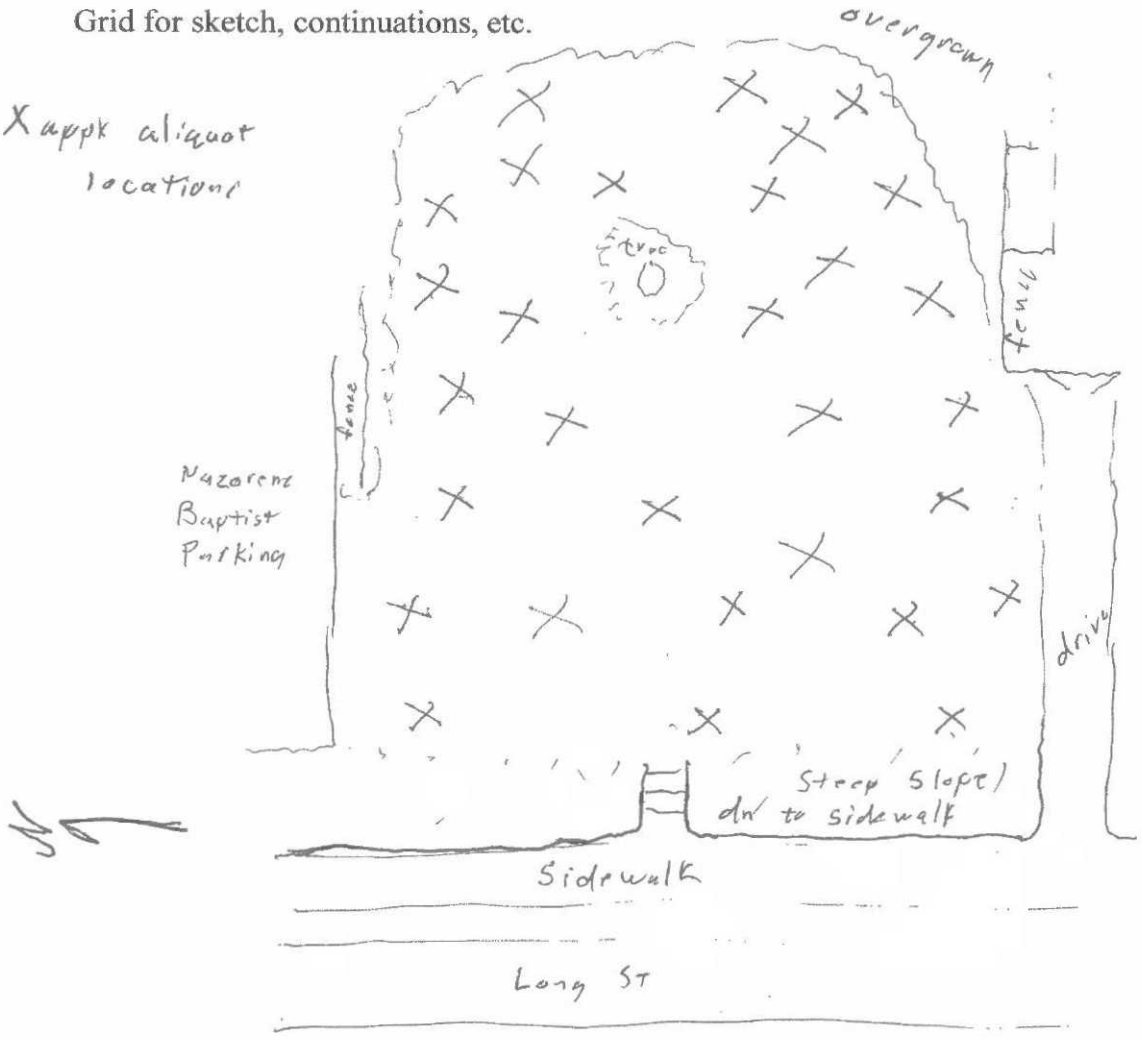
Potable/Irrigation Well Present: Yes or (No)

Date: 5-14-18 **Station ID:** SG088

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
SG088SFEY	17:05	MR	30	EY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-14-18 **Station ID:** SG091

Property Address: 2626 Long St

Description: Back yard of wood frame house, fenced, mostly grass, some paving

Sample Team (Initials): BCS **Duties:** Scribe, mixing
MR **Duties:** Coring
_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [ ]

GPS Coordinates: *Latitude:* nc N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core 30 aliquots w/ SS split corer to 4". Mix in Al pan w/ SS spoon

Description of Sample (Surface soil collected at 0-4 inches):

Med-dk brown clay loam w/ some black slag & red brick

Foundry Material Present: (Yes) or No Several cores primarily black sand & some larger particles

Other pertinent information (weather conditions, etc.):

Warm, Sunny

Field Split: *Yes or* (No)

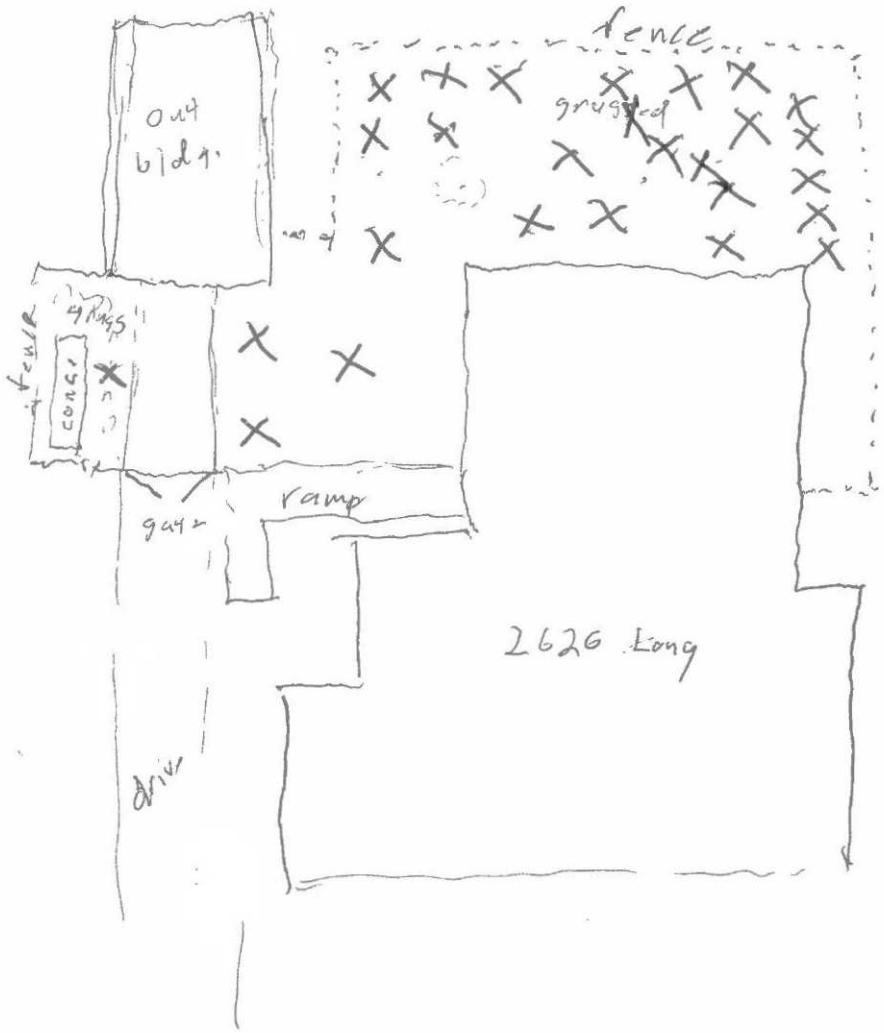
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5-14-18 **Station ID:** S6091

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
S6091SFBY	17:45	MR	30	BY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-15-18 **Station ID:** JH011

Property Address: 609 E 16th St

Description: Newly constructed or renovated frame home occupies much of lot. Homeowner states yard was sodded

Sample Team (Initials): BCS **Duties:** Scribe, mixing

MR **Duties:** Coring

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate* (n 4)

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core w/ SS split cover, mix w/ SS spoon in Al pan. Core to ~5" to allow for sodding. In garden, potting soil scraped away & cored to ~4"

Description of Sample (Surface soil collected at 0-4 inches):

In aggregate, med brown clay loam. Front yd was clayey tan silts. Rear side yards clayey. Very little organic matter at surface

Foundry Material Present: (Yes) or No → Possible. Some cores contained black sandy clay

Other pertinent information (weather conditions, etc.):

Warm, partly cloudy

Field Split: *Yes or* (No)

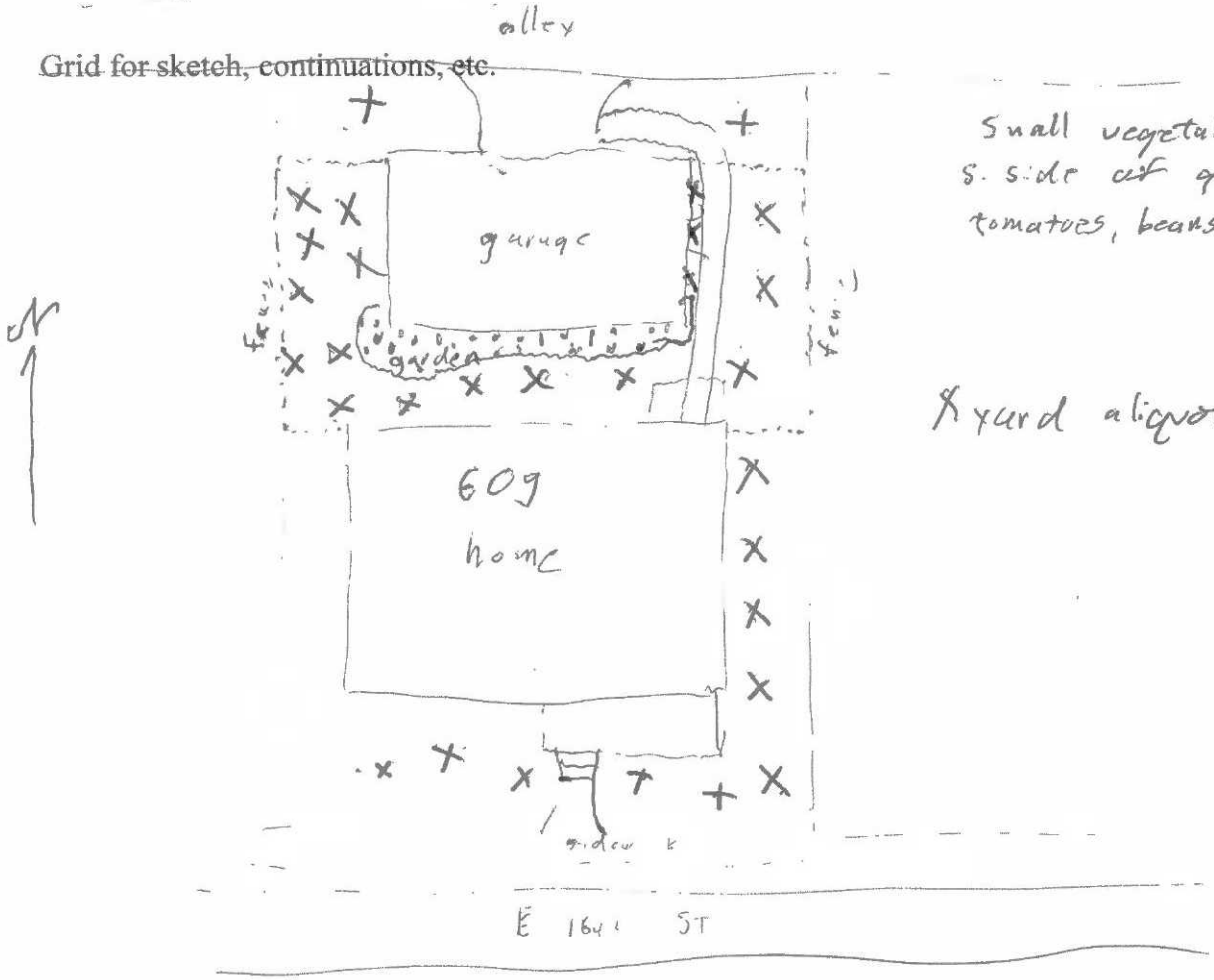
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5-15-18 **Station ID:** JH011

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
JH011SFEY	9:55	MR	30	EY
JH011SFGD	10:20	MR	25	GD

Note: Entire Yard Samples should be 30 aliquots.

Grid ~~for sketch, continuations, etc.~~



Date: 5-15-18 **Station ID:** JH029

Property Address: 510 E 16th St

Description: New frame home w/ small yards front, side, & rear. Soil clayey at surface, does not appear sodded

Sample Team (Initials): BCS **Duties:** Scribe, mix

MQ **Duties:** core

____ **Duties:** ____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* ____ N *Longitude* ____ W

GPS Operator: ____ GPS Accuracy ____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core w/ SS split sampler, mix w/ SS spoon in Al pan. Core to ~4"

Description of Sample (Surface soil collected at 0-4 inches):

Med. Brn Silty clay.

Foundry Material Present: *Yes or No* ?, rare black slaglike gravel

Other pertinent information (weather conditions, etc.):

Warm, partly cloudy

Field Split: *Yes or* (No)

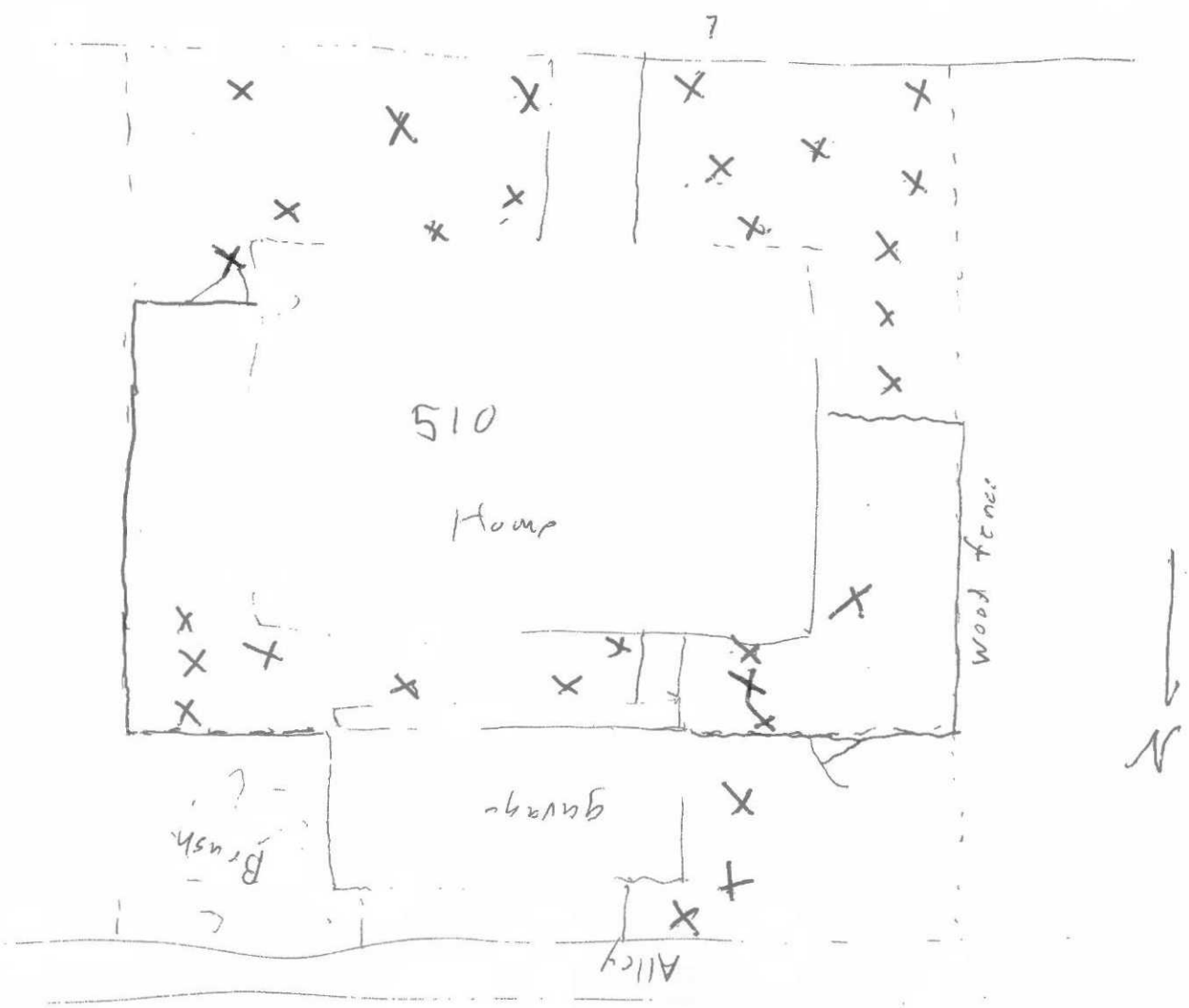
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5-15-18 **Station ID:** JH029

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
JH029SFEY	11:15	MR	30	FY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-15-18 **Station ID:** JH104

Property Address: 523 E. 18th St

Description: Newish wood frame home occupying most of lot. Significant amount of remainder artificial turf

Sample Team (Initials): BCS **Duties:** Scribe, mix

MR **Duties:** Core

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core w/ SS split sampler, mix w/ SS spoon in Al pan, Core to 4". Remove landscape bricks for core access. Scrape away mulch & obvious potting soil in other areas.

Description of Sample (Surface soil collected at 0-4 inches):

Brown (primarily), tan, & orange silty or sandy clays. ~~MRG~~ BCS mixed sample easily extrudes > ½" ribbons

Foundry Material Present: *Yes or* (No)

Other pertinent information (weather conditions, etc.):

Warm, partly cloudy. Most of yard is artificial turf w/ a few garden (decorative) plots exposed

Field Split: *Yes or* (No)

Potable/Irrigation Well Present: *Yes or* (No)

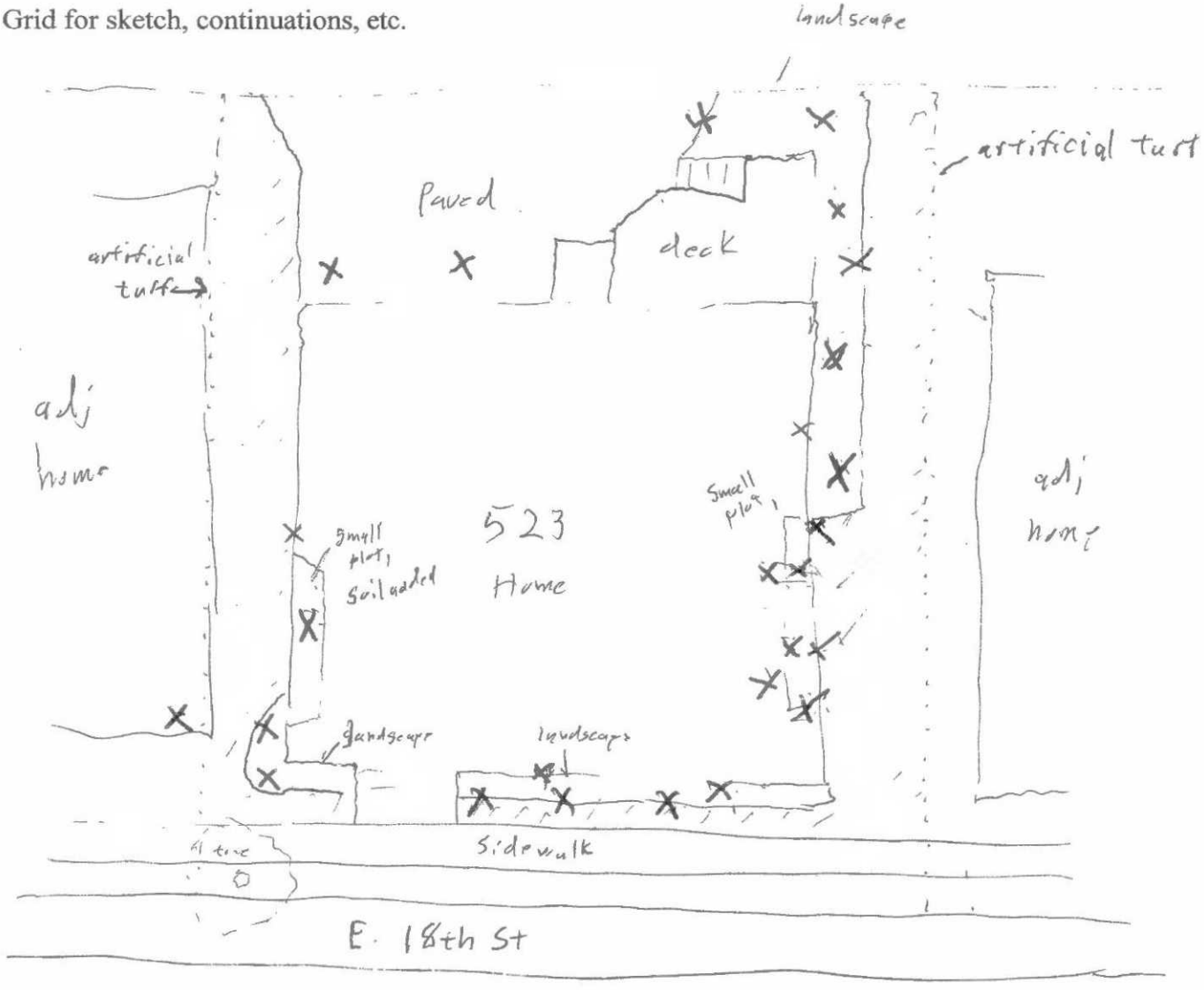
Date: 5-15-18 Station ID: JH104

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
JH104SFEY	12:15	MR	26	EY

Note: Entire Yard Samples should be 30 aliquots.

X ~ aliquot locations

Grid for sketch, continuations, etc.



Date: 5-15-18 **Station ID:** JH078

Property Address: 630 E. 17th St

Description: Long lot btwn E 17th & 18th St. House on South end & garage on N. w/ fair sized lawn

Sample Team (Initials): BCS **Duties:** Scribe, mix

MR **Duties:** Core

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W (n a)

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core w/ SS split sampler. Mix w/ SS spoon in Al pan

Description of Sample (Surface soil collected at 0-4 inches):

Brn & Lt. Brn Silty & Sandy clays. Extrudes very short ribbons

Foundry Material Present: *Yes or No ?* Some shiny black sand & small black 'slag-like' gravel

Other pertinent information (weather conditions, etc.):

Warm, Sunny

Field Split: *Yes or* (No)

Potable/Irrigation Well Present: *Yes or* (No)

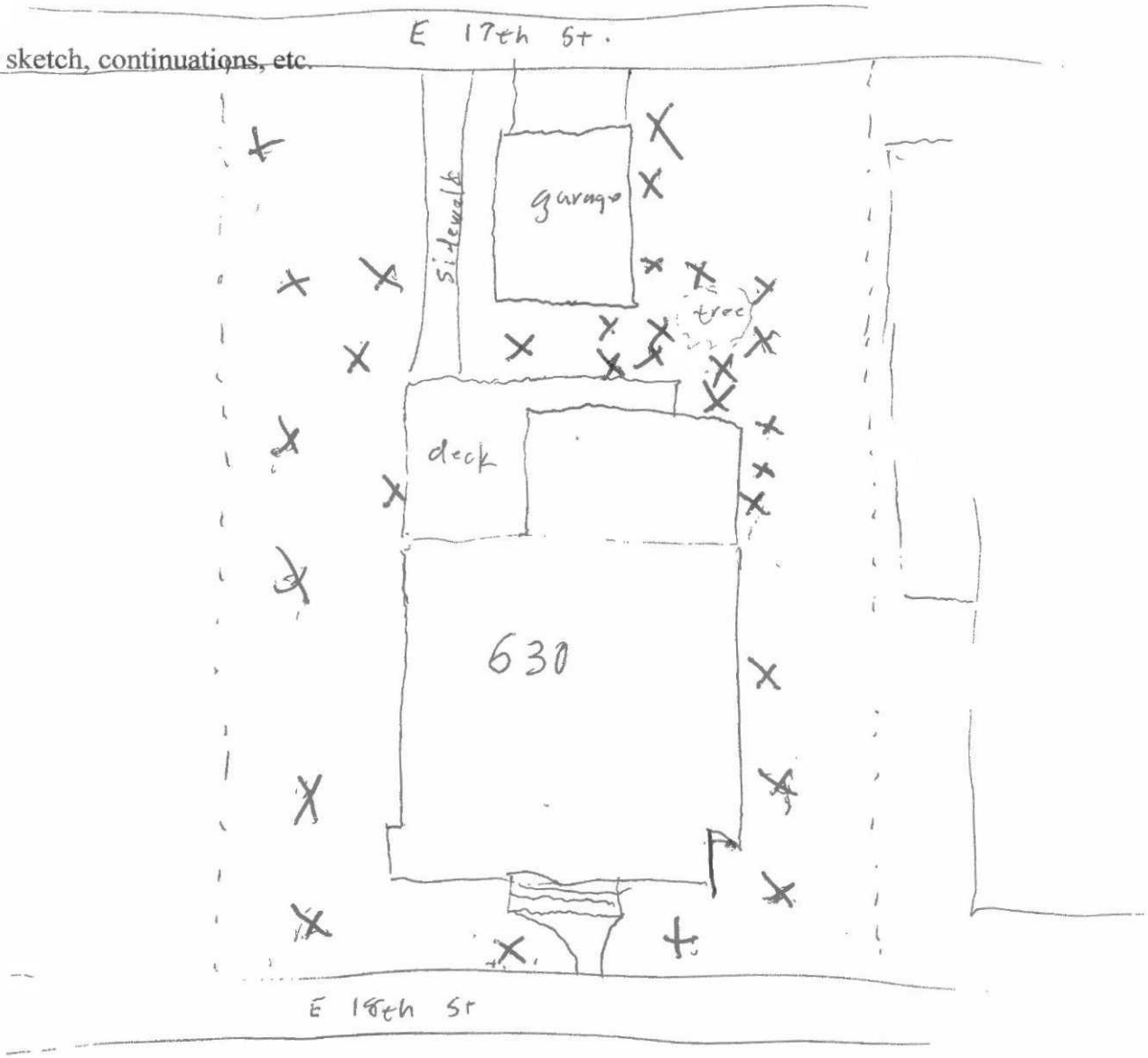
Field Sampling Report
Southside Chattanooga Lead Site Remedial Investigation

Date: 5-15-18 **Station ID:** JH078

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
JH078SFEY	13:30	MR	30	EY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-15-18 **Station ID:** JH082

Property Address: 656 E 17th ST

Description: Two story frame home fronts to 18th ST

Sample Team (Initials): BLS **Duties:** Scribe, mix

MR **Duties:** Core

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

NA

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core w/ SS split sampler, mix w/ SS spoon in Al pan

Description of Sample (Surface soil collected at 0-4 inches):

Brown sand loam

Foundry Material Present: (Yes) or No Likely, Some black sand + Several slaglike gravel

Other pertinent information (weather conditions, etc.):

Hot, Sunny

Field Split: Yes or (No)

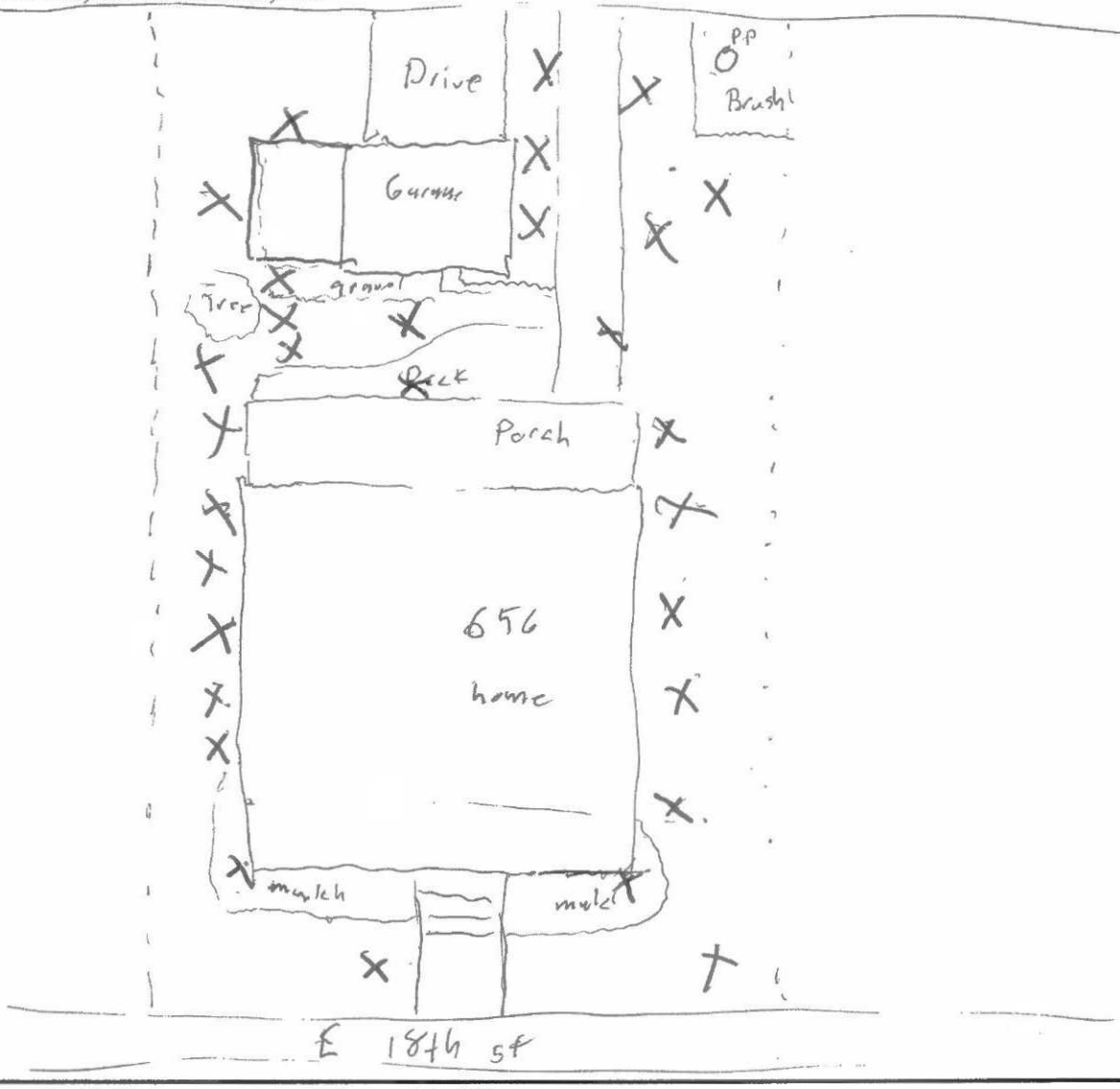
Potable/Irrigation Well Present: Yes or (No)

Date: 5-15-18 **Station ID:** JH082

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
JH082SFEY	1515	MR	30	EY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-15-18 **Station ID:** JH132

Property Address: 642 E. 19th St

Description: New frame home & garage on narrow Lot. Nearly entire yard hardscaped w/ pebbles

Sample Team (Initials): BCS **Duties:** Scribe, mix

MR **Duties:** Core

Duties:

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

bcg

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [ ]

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core w/ SS split sampler, mix w/ SS spoon in Al pan

Description of Sample (Surface soil collected at 0-4 inches):

Silty & Sandy Clay. Some cores Stiff red plastic clay, extrudes to 7 1"

Foundry Material Present: (Yes) or No Possible. small amount black sand & slaglike pebbles

Other pertinent information (weather conditions, etc.):

Hot, Sunny

Field Split: Yes or (No)

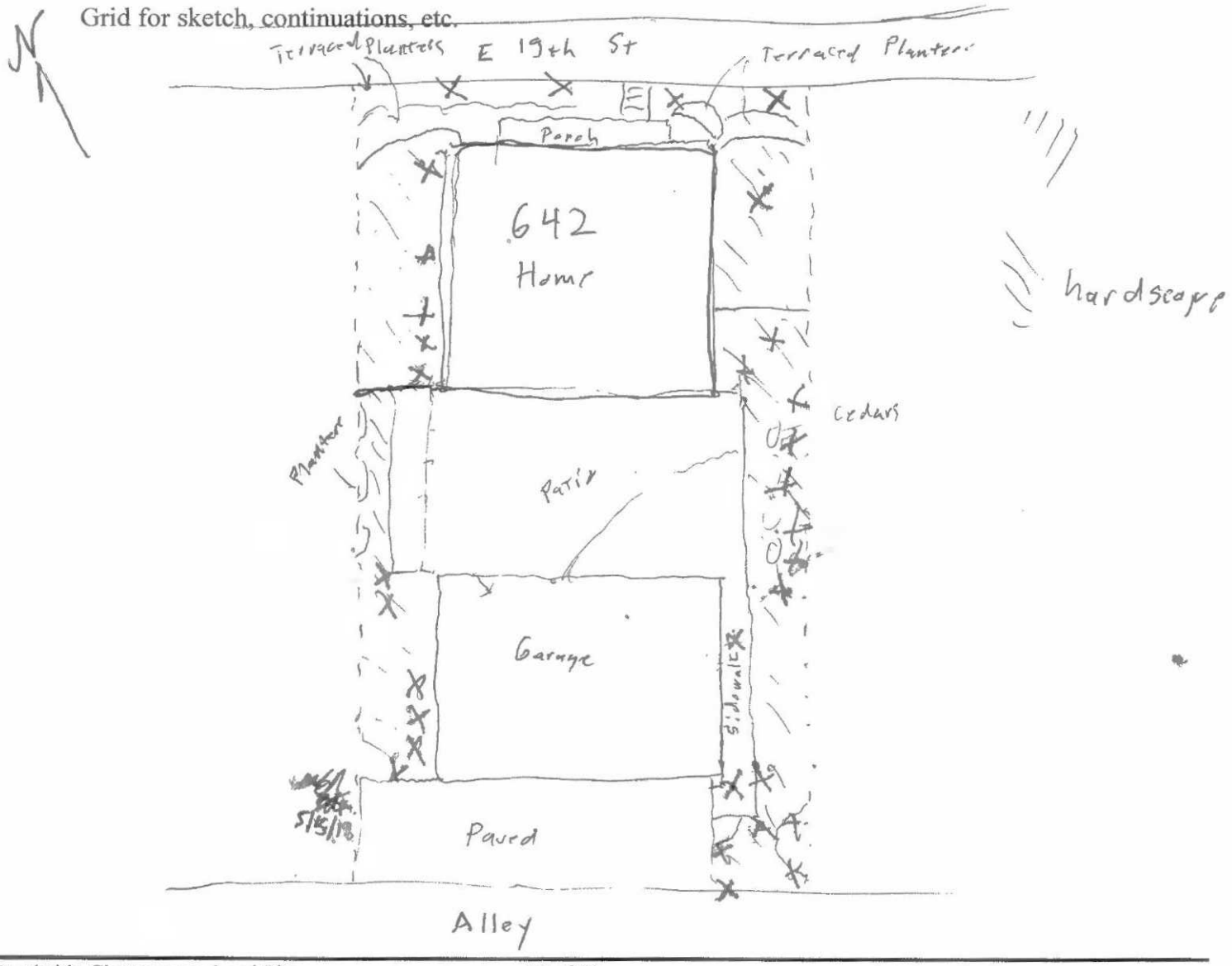
Potable/Irrigation Well Present: Yes or (No)

Date: 5-15-18 **Station ID:** JH132

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
JH132SFEY	16:40	MR	30	EY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-16-18 **Station ID:** JH133

Property Address: 646 E 19th St

Description: _____

Sample Team (Initials): BCS **Duties:** Scribe, mix
MR **Duties:** Core
_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate* (na)

Measurement Procedures:	SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures:	SESDPROC-300-R3, Soil [ ]

GPS Coordinates: (na) *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core w/ SS split sampler, mix w/ SS spoon in Al pan.

Description of Sample (Surface soil collected at 0-4 inches):

Cores are brown & reddish stiff plastic silty & sandy clays. Easily extrude ribbons >1"

Foundry Material Present: *Yes or* (No)

Other pertinent information (weather conditions, etc.):

Mild, partly cloudy

Field Split: *Yes or* (No)

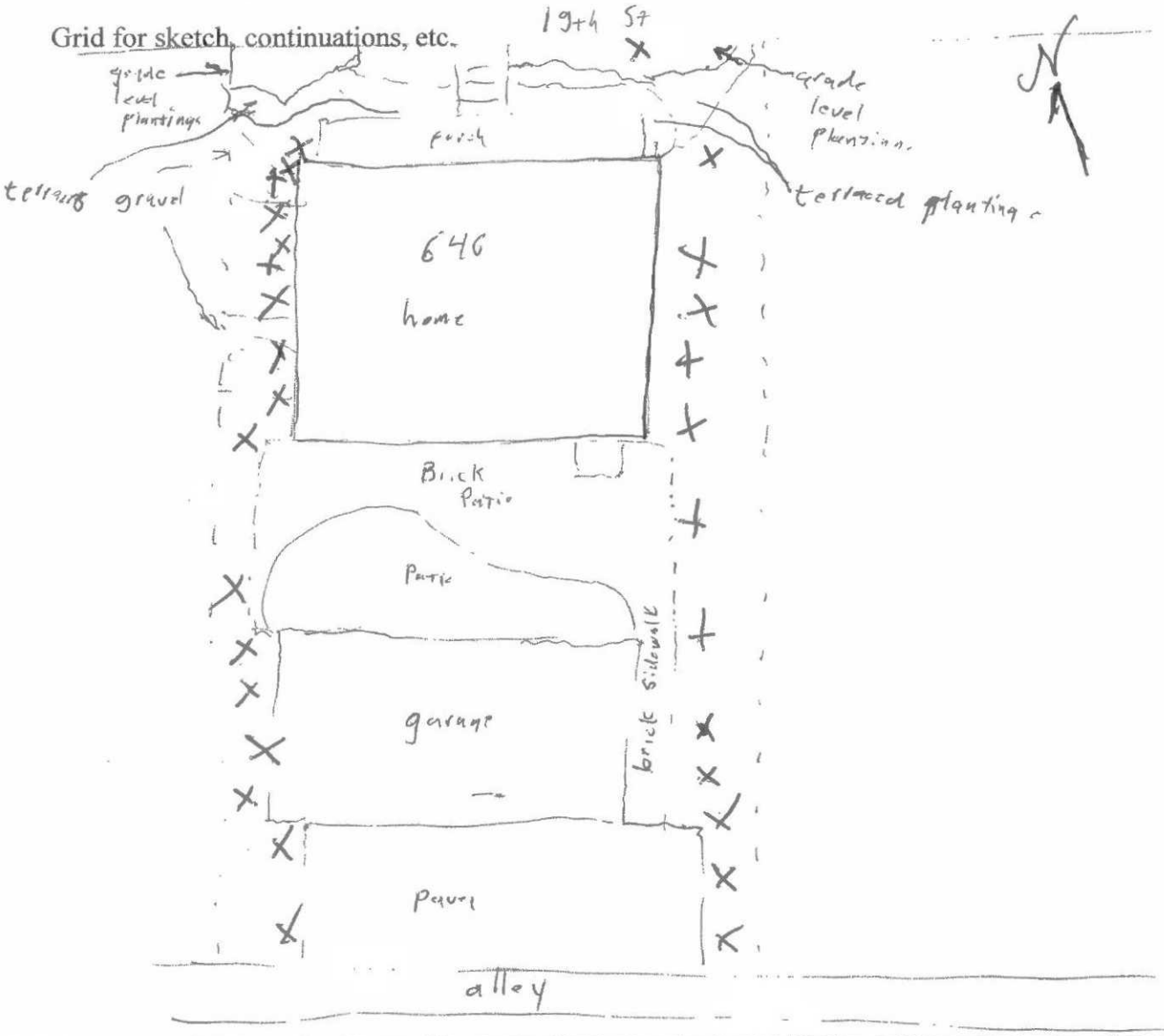
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5-16-18 **Station ID:** JH133

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
JH133SFEY	9:25	MR	30	EY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-16-16 **Station ID:** AP335

Property Address: 3741 Doris ST

Description: Single story frame home w/ grey vinyl siding, NW corner Doris & 38th

Sample Team (Initials): BCS **Duties:** Scribe, mix

MR **Duties:** Core

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate* n 9

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [ ]

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core w/ ~~SS~~ split sampler. Mic w/ SS spoon in Al pan.

Description of Sample (Surface soil collected at 0-4 inches):

Mixed, sandy loam. Some cores clayey

Foundry Material Present: *Yes or No* ? Several small black gravel, ~ ¼", coal like

Other pertinent information (weather conditions, etc.):

Warm, Sunny

Field Split: *Yes or* (No)

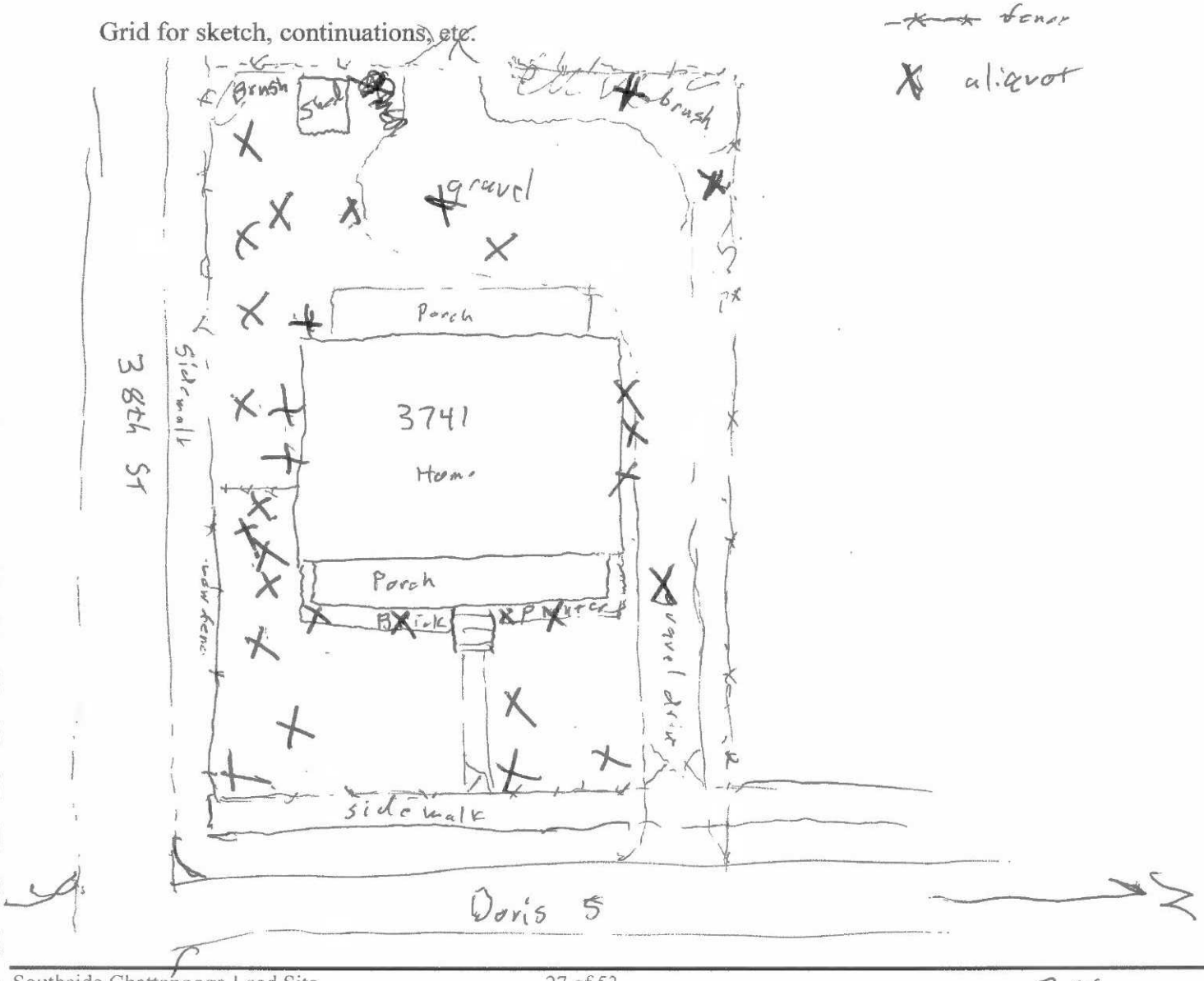
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5-16-18 **Station ID:** AP 335

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP335SFEY	11:05	MR	30	EY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-16-18 **Station ID:** AP381

Property Address: Listed on access as 167 Fagan. Across St fm 3711 Fagan

Description: Empty lot w/ short corner of chain link fence @ N.W. corner. Immediately S. of ~50' wide empty lot & 2 homes. Immediately N. of brick home @ 3708 Fagan. Lot ID'd w/ GPS & scaling from Plat map

Sample Team (Initials): BCS **Duties:** Scribe, mix

MR **Duties:** Core

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [✓]

GPS Coordinates: *Latitude:* ng N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2 Core w/ SS split sampler, mix w/ SS spoon in Al pan

Description of Sample (Surface soil collected at 0-4 inches):

Brown silt-clay loam. Some cores clayey

Foundry Material Present: Yes or No ? Some black sand. Several slaglike black gravel

Other pertinent information (weather conditions, etc.):

Warm, partly cloudy

Field Split: Yes or (No)

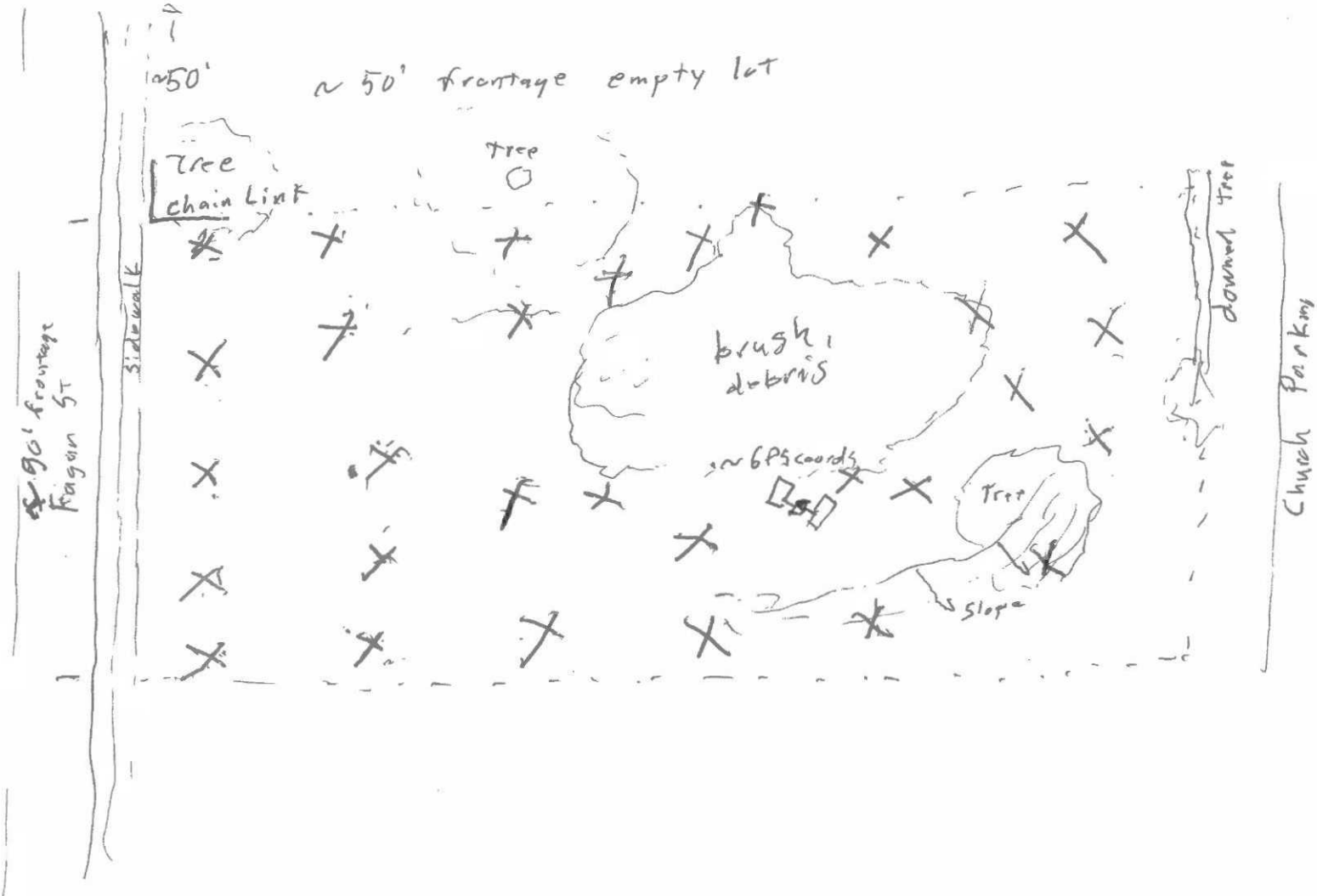
Potable/Irrigation Well Present: Yes or (No)

Date: 5-16-18 Station ID: AP381

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP381SFEY	1230	MR	30	EY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5-16-18 **Station ID:** AP430

Property Address: Dorris St, World Restoration Center Church
Description: Brick church at SE corner Dorris & 40th

Sample Team (Initials): BCS **Duties:** Scribe, mix
MR **Duties:** core
_____ **Duties:** _____
Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*
Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [x]

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W
GPS Operator: _____ GPS Accuracy _____
Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*
Sampling methodology defined on page 2 Core w/ SS split sampler, mix w/ SS spoon in Al pan

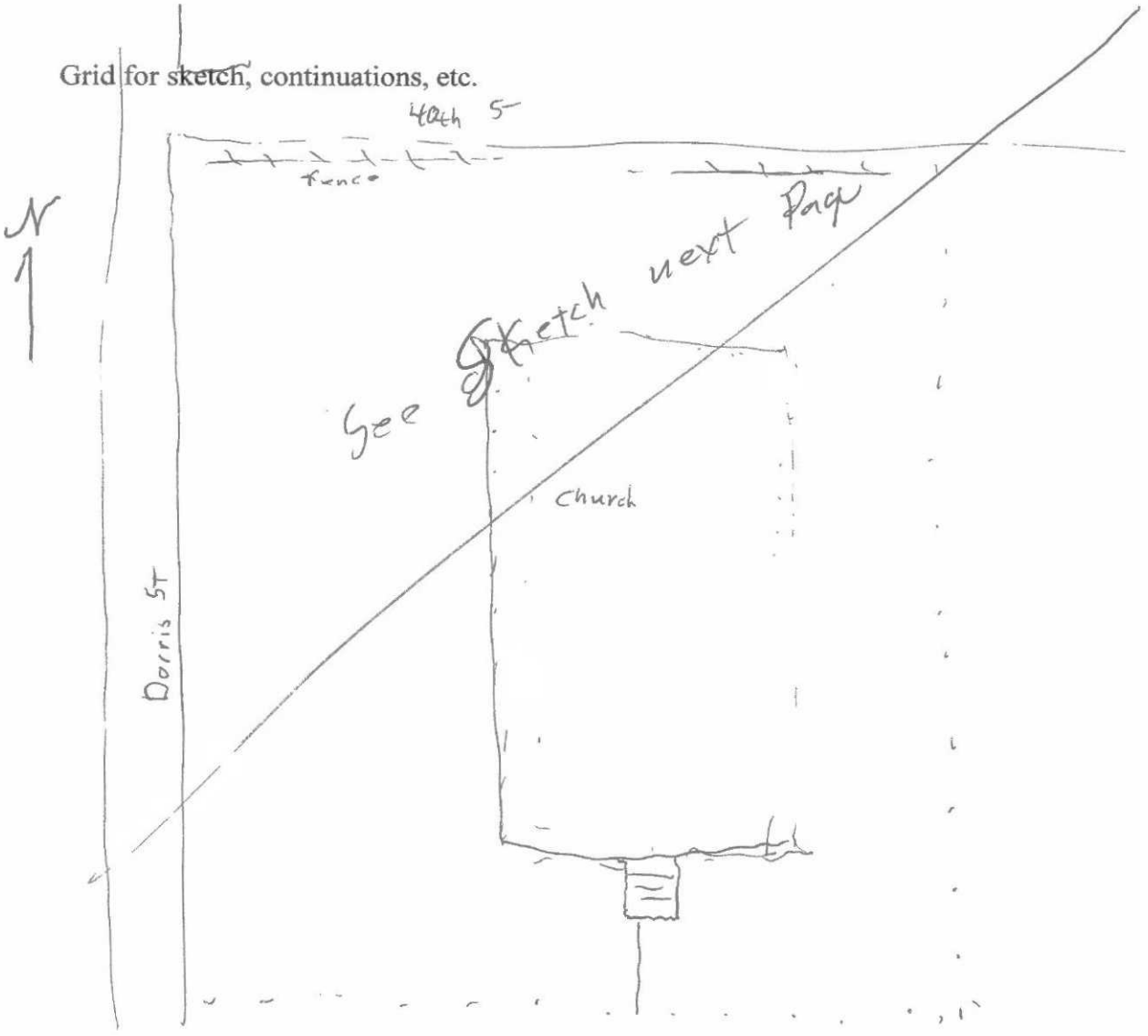
Description of Sample (Surface soil collected at 0-4 inches):
Mixed; clay loam, brown. Some cores stiff reddish silty clay
Foundry Material Present: (Yes) or No Possible. Several slag like black gravel
Other pertinent information (weather conditions, etc.):
Warm, sunny
Field Split: *Yes or* (No)
Potable/Irrigation Well Present: *Yes or* (No)

Date: 5-16-18 Station ID: AP430

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP430SFBY	1500	MR	30	BY
Other team has sampled front yard				

Note: Entire Yard Samples should be 30 aliquots.

Grid for ~~sketch~~, continuations, etc.



Date: 5-16-18 **Station ID:** AP430 * Sketch Only

Property Address: _____

Description: _____

_____

Sample Team (Initials): _____ **Duties:** _____

_____ **Duties:** _____

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [ ]

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

_____

_____

Description of Sample (Surface soil collected at 0-4 inches):

_____

_____

Foundry Material Present: *Yes or No*

Other pertinent information (weather conditions, etc.):

_____

_____

Field Split: *Yes or No*

Potable/Irrigation Well Present: *Yes or No*

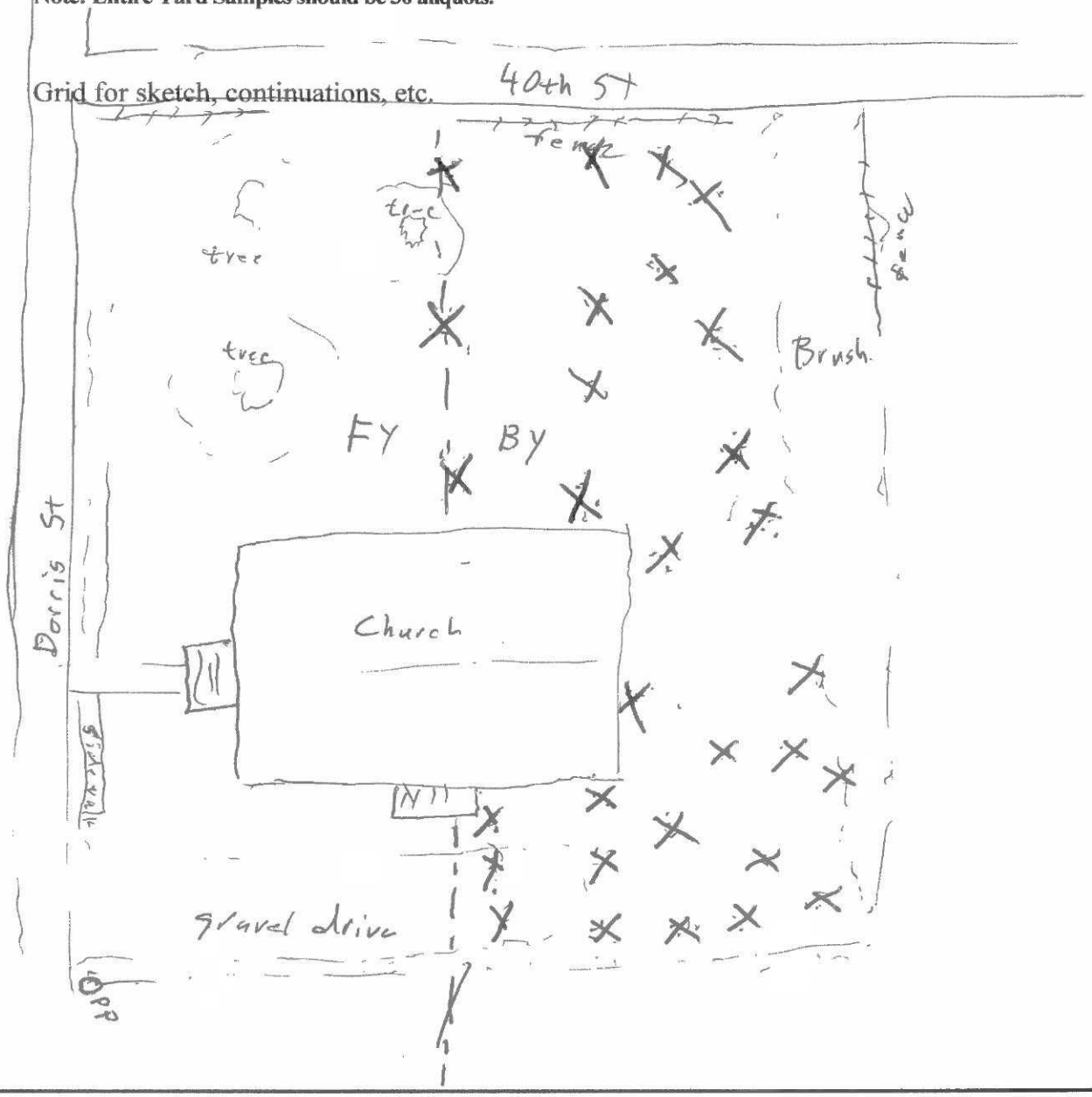
Sketch Only

Date: 5-16-19 **Station ID:** AP430

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP430SFBY	1500	MR	30	BY

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: _____ **Station ID:** _____

Property Address: _____

Description: _____

_____

Sample Team (Initials): _____ **Duties:** _____

_____ **Duties:** _____

_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]

Environmental Sampling Procedures: SESDPROC-300-R3, Soil [ ]

GPS Coordinates: *Latitude:* _____ N *Longitude* _____ W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

_____

_____

Description of Sample (Surface soil collected at 0-4 inches):

_____

_____

Foundry Material Present: *Yes or No*

Other pertinent information (weather conditions, etc.):

_____

_____

Field Split: *Yes or No*

Potable/Irrigation Well Present: *Yes or No*

United States Environmental Protection Agency
Region 4
Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

SOUTHSIDE CHATTANOOGA LEAD SITE
CHATTANOOGA, TENNESSEE
SESD PROJECT NUMBER 18-0271
TIM SIMPSON, PROJECT LEADER

FIELD SAMPLING LOGBOOK 3 of 3
Inclusive Dates: 05/16/2018

List of personnel in logbook:

Name	Initials	Organization/Duties
Tim Simpson	TS	Notes, Team Leader
Landon Pruitt	LP	sample collection
Kevin Simmons	KS	Sample support

SITE NOTES:

Garmin [ ] Serial Number NA

Trimble [ ] SESD Instrument Number: NA

File name and back-up location (laptop, thumb drive, etc.) NA

Sample Nomenclature:

Each soil sample station will be labeled using an alphanumeric system that identifies the neighborhood and sampling location. Each station will be identified with a two-letter abbreviation of the neighborhood, followed by the designated property number (3-4 digits). Sample IDs will include a media code of "SF", corresponding to the surface soil sample collected and a two-letter abbreviation for the property area sampled (**FY**=front yard, **BY**=back yard, **SD**=side yard, **EY**=entire yard, **PG**=playground, **GD**=garden).

For example: Station ID 'EL1205' will apply to a surface soil sample collected from a residential property in the East Lake neighborhood (EL=East Lake, HP=Highland Park and OG=Oak Grove). Sample ID '**EL1205SFEY**' will apply to a surface soil sample collected from the entire yard of the EL1205 residential property. A field split sample will be designated by a "S". ***Sample ID = Station ID + SF + Area Sampled***

Soil Sampling Methodology:

Surface soil samples will be collected using the Incremental Sampling Methodology (ISM). At each decision unit (residential property), a 30-point composite sample will be collected using a stainless steel coring device. Samples will be collected from 0-4 inches below ground surface. Soil will be collected in aluminum or glass pans and mixed using a stainless steel spoon. When appropriate, samplers will place a portion of homogenized soil in a plastic bag which will be analyzed using the XRF.

Generally, a decision unit will consist of an entire residential property; however, if a property is greater than ¼ acre or if a garden or playground is present, it may be divided into additional decision units. A sample collected from an entire residential property will consist of 30 aliquots; however, additional decision units (i.e. garden and playground) are small and may consist of fewer than 30 aliquots. The number of aliquots collected from gardens and playgrounds will be determined in the field. Samplers will avoid collecting cores from areas where trash may have been burned or where cars are parked. If coring device refusal occurs before achieving a 4-inch depth, then the sampler will move the aliquot location within a 2-foot-diameter zone. Soil will be mixed in glass or aluminum pans using stainless steel spoons. Organic matter (roots, leaves, grass, etc.), rocks, and trash will be removed from the soil sample during mixing.

Table 1: Sample Locations - May 2018

Station ID	Property Address	Neighborhood	Latitude	Longitude	Comment
AP018	1025-1027 W. 37th Street	Alton Park	35.011231	-85.321311	
AP335	3741 Dorris Street	Alton Park	35.005316	-85.309811	
AP164	3525 Chandler Avenue	Alton Park	35.009407	-85.314324	Confirmation Sample
AP190	4032 Chandler Avenue	Alton Park	35.004765	-85.315929	
AP417	4014 Fagan Street	Alton Park	35.002611	-85.308954	Field Duplicate
AP381	Fagan Street	Alton Park	35.005272	-85.307877	
AP492	4279 Quinn Adams Street	Alton Park	34.999956	-85.309808	
AP538	113 Workman Road	Alton Park	34.998251	-85.311942	
AP430	4004 Dorris Street	Alton Park	35.003508	-85.309754	Church
CP042-164	164 W. 17th Street	Cowart Place	35.034894	-85.309985	
CP035	212 W. 17th Street	Cowart Place	35.035172	-85.310826	
CP110	1816 Williams Street	Cowart Place	35.033626	-85.310718	Confirmation Sample
CP111	1818 Williams Street	Cowart Place	35.033524	-85.310775	
CP140	1921 Emerson Drive	Cowart Place	35.032410	-85.309294	
SG091	2626 Long Street	Southside Gardens	35.025158	-85.314153	Back Yard Only
SG088	2616 Long Street	Southside Gardens	35.025491	-85.313704	
SG027	109 W. 26th Street	Southside Gardens	35.026844	-85.314016	Field Duplicate
SG022	59 W. 26th Street	Southside Gardens	35.026550	-85.313027	
SG020	W. 26th Street	Southside Gardens	35.026482	-85.312847	
SG034	2510 Cowart Street	Southside Gardens	35.027383	-85.315394	
SG008	Church Parcel (north)	Southside Gardens	35.027594	-85.315237	
JH073	1701 Jefferson Street	Jefferson Heights	35.031563	-85.301260	
JH132	642 E. 19th Street	Jefferson Heights	35.029328	-85.300911	
JH133	646 E. 19th Street	Jefferson Heights	35.029246	-85.300846	
JH104	523 E 18th Street	Jefferson Heights	35.031514	-85.302288	
JH082	656 E. 17th Street	Jefferson Heights	35.031156	-85.300299	Confirmation Sample
JH078	630 E 17th Street	Jefferson Heights	35.031316	-85.300721	
JH011	609 E. 16th Street	Jefferson Heights	35.032674	-85.300195	
JH029	510 E 16th Street	Jefferson Heights	35.032506	-85.301219	

Sample ID = Station ID + SF + Area Sampled (**FY**=front yard, **BY**=back yard, **SD**=side yard, **EY**=entire yard, **PG**=playground, **GD**=garden). X=Field Duplicate.

Date: AP190 **Station ID:** AP190

Property Address: 4032 Chandler Avenue

Description: Residential property
No children observed

Sample Team (Initials): TS **Duties:** Team Leader / Notes / Soil mixing
LP **Duties:** Samples
_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [ ]

GPS Coordinates: *Latitude:* NA N *Longitude* NA W

GPS Operator: _____ GPS Accuracy _____

Garmin [ ] Trimble [ ] Logged? Y or (N)

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

Brown / orange clay material, some black slag-like material observed, Mostly clay soil

Foundry Material Present: *Yes or No*
See note Above

Other pertinent information (weather conditions, etc.):

Overcast, Rained on May 15

Field Split: *Yes or* (No)

Potable/Irrigation Well Present: *Yes or* (No)

Date: 5-16-18 **Station ID:** AP190

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP190SFEY	08:50	LP	30	Entire yard

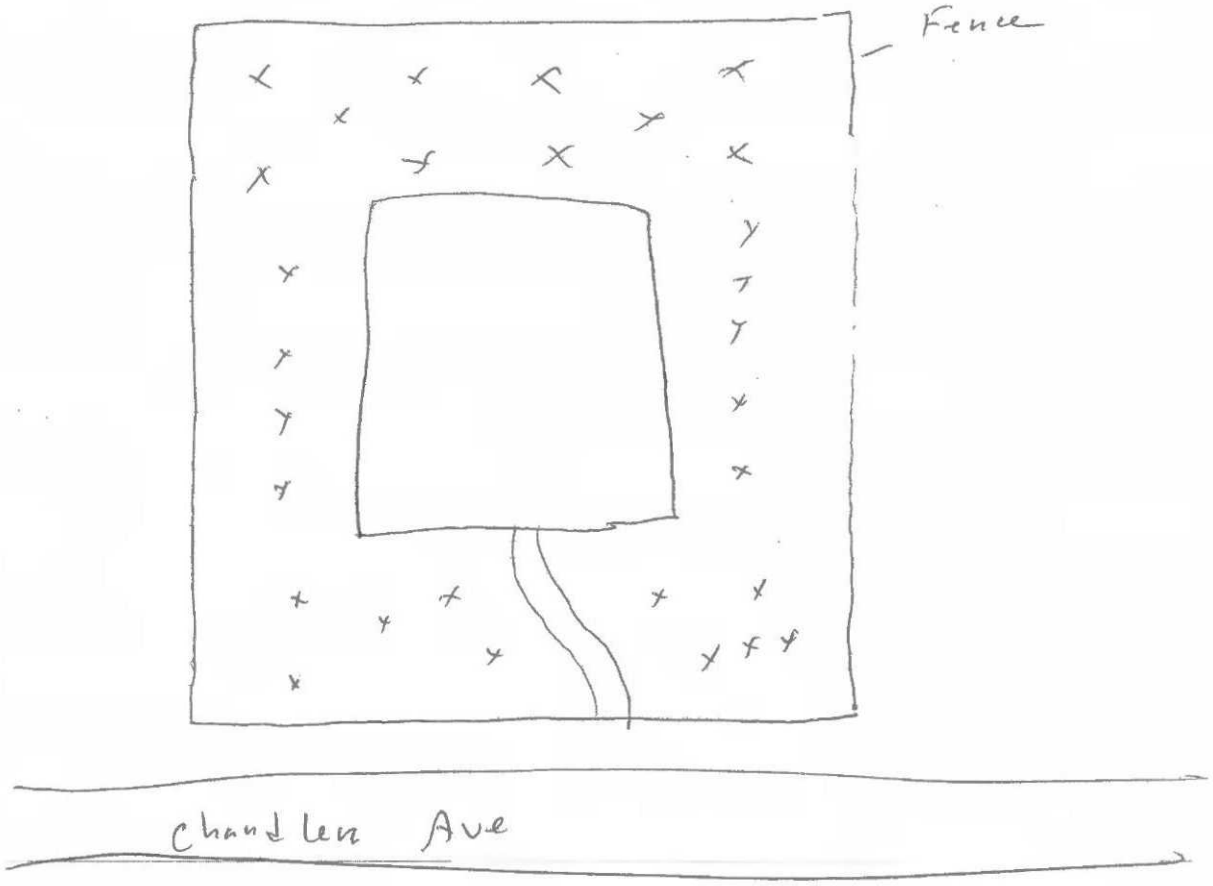
18
05/16/18

Note: Entire Yard Samples should be 30 aliquots.

OAK Hills sign

No garden, no playground.

Grid for sketch, continuations, etc.



Date: 5/16/18 **Station ID:** AP164

Property Address: 3525 Chandler Ave

Description: Danger sign on door, vacant house overgrown back yard

Sample Team (Initials): TS **Duties:** Notes, Soil mixing
LP **Duties:** sampler
____ **Duties:** ____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*
Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [ ]

GPS Coordinates: *Latitude:* NA N *Longitude* NA W
GPS Operator: NA GPS Accuracy NA
Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*
Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):
Brown to dark brown clay soil. Some black material observed

Foundry Material Present: *Yes or No*
Some shiny black slag/coal like material observed

Other pertinent information (weather conditions, etc.):
Sunny, warm

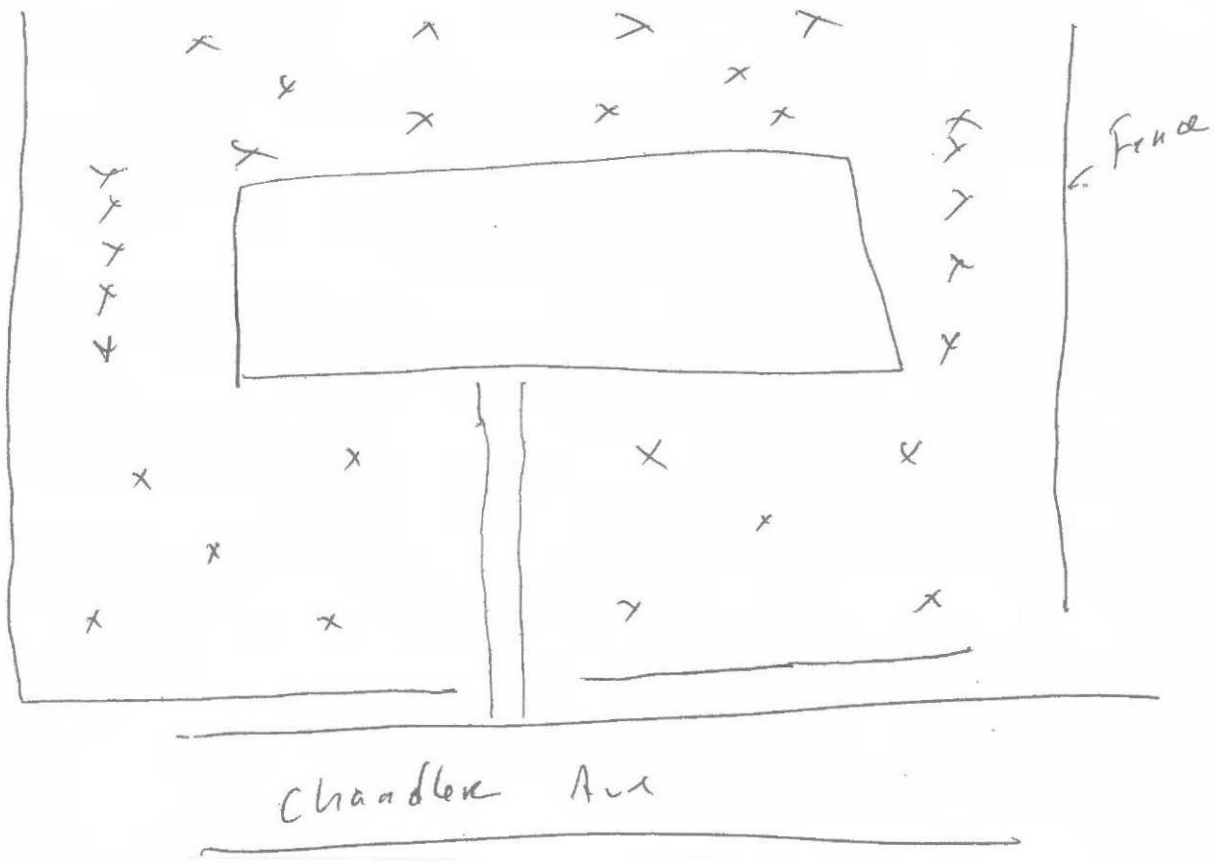
Field Split: *Yes or* (No)
Potable/Irrigation Well Present: *Yes or* (No)
Confirmation Sample collected

Date: 05/16/16 **Station ID:** AP164

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
AP164 SF EY	9:20	LP	30	Entire Yard
		TB		
		5/16/16		

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.



Date: 5/16/18 **Station ID:** —

Property Address: QA Samples

Description: water source blank
Equipment Rinse Blank

Sample Team (Initials): TS **Duties:** Sampler
KS **Duties:** sample support
_____ **Duties:** _____

Duties: (Collect Soil Core, Soil Mixing, Field Notes)

SESD Operating Procedures: *Check, as appropriate*

Measurement Procedures: SESDPROC-110-R4, Global Positioning System [ ]
Environmental Sampling Procedures: SESDPROC-300-R3, Soil [ ]

GPS Coordinates: *Latitude:* NA N *Longitude* NA W

GPS Operator: NA GPS Accuracy NA

Garmin [ ] Trimble [ ] Logged? Y or N

Sampling Procedure/Method Used: *(List methodology deviations or additional information)*

Sampling methodology defined on page 2

Description of Sample (Surface soil collected at 0-4 inches):

NA

Foundry Material Present: *Yes or No*

Other pertinent information (weather conditions, etc.):

NA

Field Split: *Yes or No*

Potable/Irrigation Well Present: *Yes or No*

Date: 5/16/18 Station ID: QA Samples

Sample ID	Sample Time	Sampler	No. of Aliquots	Area Sampled (i.e. Entire Yard, Garden)
QA WS1	12:50	TS	—	Water Source (FEC)
QARB1	12:51	TS	—	Sample coring device

Note: Entire Yard Samples should be 30 aliquots.

Grid for sketch, continuations, etc.

Water Source (FEC) Blank (QAWS1) collected by Tim Simpson at 12:50. Equipment Rinse Blank (QARB1) collected by Tim Simpson @ 12:51. Rinse blank of soil coring device. Samples preserved with HNO_3.

End of Log book

TS 5/16/18

United States Environmental Protection Agency
Region 4
Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

Project Name: Southside Chattanooga Lead Site
Project Location: Chattanooga, Tennessee
Project ID Number: 18-0271

Project Leader: Tim Simpson

XRF Calibration & Field Measurement Logbook

Book 1 of 1

Inclusive Dates: May 14 – 16, 2018

List of personnel in logbook:

Name	Initials	Organization/Duties
Kevin Simmons	KS	EPA SESD
Don Fortson	DF	R4 ESAT / Analyst
Landon Pruitt	LP	EPA SESD

The following procedures and guidance will be used unless otherwise stated in the field logbooks:

SESDPROC-1002-R0, Logbooks
SESDPROC-107-R3, Field X-Ray Fluorescence Measurement
Region 4 Superfund X-Ray Fluorescence Field Operations Guide, Rev 0

Notes:

Instrument used: Niton XL3t 955 Ultra Serial # 93477

Calibration Standards used:

Standard	Serial#	Pb Value (mg/kg)	Acceptable Range (mg/kg)
USGS SdAR-M2	180-706	808	646 - 969
RCRApp	180-661	500	400 - 600
SiO2 99.995% PP	180-647	<10	<12

Run time is 30 seconds per reading.

XRF calibration and field results will also be recorded in a Microsoft Access database and ~~Excel spreadsheets~~.

5/15/18 KS

No expiration date for the standards is listed on documentation supplied by the manufacturer.

Additional Notes:

5/14/18 - XRF system check 1 of 2 - OK
1313 2 of 2 - OK

5/15/18 - XRF system check 1 of 2 - OK
0822 2 of 2 - OK

5/16/18 - XRF system check 1 of 2 - OK
0821 2 of 2 - OK

Blank/Standard Calibration Check

Instrument Niton XL3t 955 Ultra **Serial #** 93477 **Analyst** K Simmons

Date	Time	Blank/ Standard	Pb Value ppm	± 20% Range	Reading 1	Reading 2	Reading 3	Reading 4	Average Reading	Avg Within Range Y/N
5/14/18	1342	SiO_2	<10	<12	3.2	3.3	3.3	3.2	3.25	Y
"	1353	RCRApp	500	400-600	471	450	464	471	464	Y
"	1358	USGS SdAR-M2	808	646-969	802	807	797	781	796.75	Y
"	1819	Si_2	<10	<12	3.4	3.4	3.3	3.1	3.3	Y
"	1824	RCRApp	500	400-600	465	464	460	460	469.75	Y
"	1828	USGS	808	646-969	782	792	804	803	795.25	Y
5/15/18	0826	Si_2	<10	<12	3.2	3.2	3.3	3.2	3.225	Y
"	0833	RCRApp	500	400-600	457	464	479	468	467	Y
"	0837	USGS	808	646-969	804	780	813	806	800.75	Y
"	1712	Si_2	<10	<12	3.2	3.2	3.5	3.4	3.325	Y
"	1718	RCRApp	500	400-600	473	464	471	476	471	Y
"	1723	USGS	808	646-969	788	801	813	790	798	Y
5/16/18	0827	Si_2	<10	<12	3.5	3.2	3.6	3.6	3.475	Y
"	0832	RCRApp	500	400-600	463	465	463	465	464	Y
"	0836	USGS	808	646-969	799	799	793	793	796	Y
"	1526	Si_2	<10	<12	3.2	3.2	3.1	3.3	3 2	Y
"	1532	RCRApp	500	400-600	460	460	466	460	461.5	Y
"	1535	USGS	808	646-969	796	806	806	805	803 25	Y

End of Logbook

United States Environmental Protection Agency
Region 4
Science and Ecosystem Support Division
980 College Station Road
Athens, Georgia 30605-2720

SOUTHSIDE CHATTANOOGA LEAD SITE
CHATTANOOGA, TENNESSEE
SESD PROJECT NUMBER 18-0271
TIM SIMPSON, PROJECT LEADER

SOIL MOISTURE MEASUREMENT LOGBOOK 1 of 1
Inclusive Dates: 5/14 - 5/16/18

List of personnel in logbook:

Name	Initials	Organization/Duties
Tim Simpson	T.S.	SESD Field Project Leader
Don Fortson	DF	Analyst
Kevin Simmons	KS	Analyst
Landon Pruitt	LP	Analyst

SITE NOTES:

Percent Moisture - May 2018

	Station ID	Sample ID	Percent Moisture	Staff	Comment
5/14/18	SG020	SG020-EY	7.4%	KS/DF	
	SG034	SG034-EY	8.3%	KS/DF	
	SG022	SG022EY	7.9%	KS/DF	
	SG008	SG008EY	7.5%	KS/DF	
	SG027	SG027~~EY~~ SFEY	8.2%	KS/DF	
	SG027	SG027SFEYX	7.7%	KS/DF	
	SG088	SG088SFEY	7.6%	KS/DF	
KS 5/15/18	SG091	SG091SFBY	8.7%	KS/DF	
	SG091	SG091SFBY	7.1%	KS/DF	5/15/18 before sieve
5/15/18	CP042-164	CP042-164SFEY	11.4%	KS/DF	
	CP042-164	CP042-164SFEY	7.4%	KS/DF	Retest after drying (air)
	CP035	CP035SFEY	10.4%	KS/DF	
	CP035	CP035SFEY	10.1%	KS/DF	Retest after drying (air)
	CP035	"	7.8%	KS/DF	After drying
	JH011	JH011SFEY	0.9%	KS/DF	
	JH011	JH011SFGD	7.8%	KS/DF	
	CP111	CP111SFEY	11.3%	KS/DF	Recheck after drying (air)
	CP110	CP110SFEY	10.3%	KS/DF	" " " (air)
	CP110	"	0.2%	KS	After drying
	CP111	CP111SFEY	3.0%	KS/DF	After drying
	JH029	JH029SFEY	8.5%	KS/LP	
	JH078	JH078SFEY	8.2%	KS/LP	
	CP140	CP140SFGD	10.9%	KS/LP	Recheck after drying (air)
	CP140	CP140SFSY	4.7%	KS/LP	
	JH104	JH104SFEY	5.5%	KS/LP	
	CP140	CP140SFGD	7.4%	KS/TS	
	AP018	AP018SFEY	5.1%	KS/TS	
	JH082	JH082SFEY	7.5%	KS/LP	

Percent Moisture - May 2018

5/16/18

Station ID	Sample ID	Percent Moisture	Staff	Comment
JH132	JH132 SFEY	0.6%	KS	After oven drying
AP538	AP538 SFEY	13%	KS/LP	Recheck after drying (air)
JH133	JH133 SFEY	4.0%	KS/LP	~~Extra~~ Recheck after drying (1st check) (air)
AP190	AP190 SFEY	7.8%	KS/LP	1st check " " (air)
AP164	AP164 SFEY	7.4%	KS/LP	
AP538	AP538 SFEY	10.3%	KS/LP	air ~~dry~~ KS dry - recheck again
AP538	AP538 SFEY	5.8%	KS	air dry
AP430	AP430 SFEY	7.2%	KS	
AP492	AP492 SFEY	6.1%	KS	air dry
AP381	AP381 SFEY	7.2%	KS	
AP335	AP335 SFEY	8.7%	KS	
AP417	AP417 SFEY	8.3%	KS	
AP430	AP430 SFBY	7.6%	KS	

End of Logbook

END OF REPORT